

HARBUTT'S  
PLASTIC METHOD  
AND THE USE OF  
PLASTICINE



CHAPMAN & HALL













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AND THE USE OF

PLASTICINE

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# HARBUTT'S PLASTIC METHOD

AND

*THE USE OF PLASTICINE IN THE ARTS  
OF WRITING, DRAWING, & MODELLING  
IN EDUCATIONAL WORK*

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BY

WM. HARBUTT  
(Bath)

WITH 56 ILLUSTRATIONS

LONDON—CHAPMAN & HALL, LTD.

1897

COPY OF LETTER FROM MISS FRANKS,  
A.F.S., A.C.P.

*(Principal of Camden House Training School for Kindergarten Teachers).*

13, York Place, W.

July 20th, 1897.

DEAR MR. HARBUTT,—I and my teachers are delighted with your Plastic Method of modelling, and think it has a great future before it. We have had great difficulties with the ordinary clay—and it seems to me that you have overcome all these, and that your material and method of procedure opens up many possibilities which our old modelling did not allow of. My students' meeting on Friday was intensely interested in the little you had time to show us, and I propose on the next occasion to spend the whole evening on the Plastic Method. I think you show a thorough knowledge of child-nature—with its limitations and possibilities; and the gradation you adopt is the best possible preparation for art proper.

All your tools and appliances give evidence of having been devised and elaborated by one who is intimately acquainted with the difficulties of practical teaching. For kindergarten work your modelling-paste will be invaluable; it will enable the children to express their ideas as easily by modelling as by drawing or brush-work.

One of the great advantages in your method is the great saving of time and trouble—as no preparation of material is required, nor any special arrangement of the room. I look upon your system as a new mode of expression, and feel that modelling has now come within the reach of all. I feel I must thank you in the name of all those teachers and children who will benefit by your many years of patient and sympathetic work; and I hope you will not count amongst the least grateful

Yours very truly

FANNY FRANKS.

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## AUTHOR'S PREFACE.

THIS little book is published in the interests of "Technical Education," and as an adjunct to practical training—the chief end in view throughout its pages. It is designed to illustrate a new departure in teaching, entitled the "PLASTIC METHOD," by which writing, drawing, and the graphic arts generally, as well as modelling, can be taught in a more expeditious, systematic, and effective manner than hitherto, and in correlation with other studies in the school.

The photographic reproductions of work done enable the "PLASTIC METHOD" to speak practically for itself, while the various suggestions and detailed explanations of the letterpress lend assistance towards the general mastery of the subject.

The material "Plasticine" perfected by the author is a modelling paste possessing all the advantages both of clay and the expensive wax of the artist, without the disadvan-

tages of either. Having been made available for all the conditions of school use, its field of usefulness is one which leaves ample room for exploration and development.

For use in schools, Kindergarten, elementary, and middle-classes, there is in course of preparation a carefully graded course suited to their various requirements. This course will include photographic copies, flexible reliefs, and plaster casts, as well as simple apparatus to give effect to the teaching. An adaptation also of the "Method" for schools for the blind and for feeble-minded or backward children is in hand.

Some of the suggestions and methods herein advocated may appear to be of a somewhat revolutionary tendency, as, for instance, in the proposal to teach *writing* and *drawing* in a plastic medium; but whatever doubts may exist as to the advisability of the *exclusive* adoption of so great an innovation, none need be entertained as to its *occasional* use in this direction as a means for the development of that freedom of hand and arm so necessary in all arts and handicraft, and of the training of the eye and mind to the appreciation of form. But if it should serve no other purpose than as a training of the muscles in easy free movement before definite form and proportion are introduced, it will have served a great end.

The chief aim, however, has been to develop the idea of *modelling* by the dexterous use of the fingers and of two or three simple tools. The tools are not intended to supersede the use of the fingers, but rather to supplement them, and to aid the student in carrying the refinements of his work farther than otherwise would be possible.

This is of importance, as there is probably nothing more to be deprecated than the aimless abandon and license on the one hand, or the laborious scraping and finishing on the other, which sometimes passes for modelling, serving rather to demoralize the young ideas, and to put obstacles in the way of sound work and future success.

The material, the appliances, and the exercises, novel as they appear to be, lend themselves readily to the most careful and delicate work, at once satisfying the instincts of the more gifted, and amply repaying careful application and industry on the part of all, particularly as the results in every case, where it is so desired, can be made permanent by the facilities of the casting apparatus employed.

WM. HARBUTT.

*Bath*, 1897.



## INTRODUCTORY CHAPTER.

ALL educationalists are agreed in recognizing the supreme value and importance of the art of modelling in the training of the young, and so many able treatises have been written detailing its advantages as an educational agent, that it is unnecessary and superfluous to dwell upon this point.

At the same time, it will scarcely be denied that no really serious effort has been made to give effect to this consensus of expert opinion, and an efficient systematized course of instruction is still a universally acknowledged need.

The modelling systems already in use can scarcely be said to fulfil the requirements of school life, or to belong in any really practical manner to general education. As a matter of fact, we must begin with the child at an earlier age, and with very much simpler methods than heretofore.

“ Harbutt’s Plastic Method ” is an attempt to attain the end so much desired. By the introduction of a new material and apparatus, such a scientifically graded scheme

of instruction upon a rational basis is presented as is hoped will prove of permanent practical use, not only in the art class-room, but throughout the busy time-limited elementary school.

It has been frequently asserted that drawing should precede writing; one might go further and say that modelling should precede drawing. By the "Plastic Method" the treble advantage is secured that modelling, writing, and drawing may be carried on simultaneously, each being so interwoven with the other that they cannot be separated. It possesses for the child something of the charm which he finds upon the sea-shore, with spreading sand for his sheet of paper and all his tools ready to hand, the finger for his stilus, and the open palm for his spatula. Now he can express ideas! It is precisely this point, the development of which is sought and may be attained in the "Plastic Method." Even at the earliest school-age the child has thoughts and impulses he is desirous of expressing and embodying in some definite, tangible form, and it has been the want of a fitting medium to express these thoughts and impulses that has led to the adoption of many cramping and restraining expedients, causing the loss of valuable school time, and dulling the natural enthusiasm and interest of the pupil.



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It is not necessary to wait until the pupil can draw or write perfectly before encouraging this inventive and imaginative faculty ; scope should be allowed for the measure of his executive ability, and given a suitable medium adapted to his requirements, the child will at once proceed to turn it to good account.

It has been impossible until very recently to allow the requisite facilities to this end in our elementary schools ; clay is unsuitable for so many reasons, amongst others, the difficulty of keeping it in perfect working condition, the litter and mess which invariably accompany its use, and the ever-present necessity of water, the time and labour in preparing for a lesson and clearing away afterwards ; besides the almost insuperable difficulty of preserving the work from one lesson to another.

Practical teachers say that unless a special room and apparatus are set apart for the work and considerable time devoted to it under skilled teachers, modelling in clay cannot be taught satisfactorily in our crowded day-schools.

It is believed that by the use of Plasticine in connection with this new method, all these difficulties will be overcome, that modelling will no longer be regarded as an isolated and useless fad, the despair and perplexity of the teacher ; but by being conceived in a large and more comprehensive

spirit, and placed upon a sound practical footing and in co-relation with other studies, it must be accorded that position to which its educational value so fully entitles it. To do this the instincts and methods of the children themselves must be studied, and to a certain extent followed. Freedom and spontaneity of movement are the key-note of their modes of expression; these qualities should not be suppressed, but directed and cultivated under a firm but attractive drill. The wetted finger on the window pane, the stick upon the wet sand, even the scooping of the family soap, are, from this point of view, interesting and worthy of attention. (Plates 6—10.)

It is not improbable that the primitive method of teaching writing in dry sand scattered on the floor, and the use of the brush and reed in drawing, has contributed to the greater excellence and manipulative skill displayed in the arts and crafts of many of the Oriental nations. On the other hand, it is more than probable that the excessive use of the hard steel pen and the discouragement of the modelling tool has hindered and diverted our own artistic development as a nation.

If such a charge is in any sense true, it behoves us to take immediate steps to remedy the error, and in the interests of technical education, to at once place the art



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of modelling on at least an equal footing with drawing in the whole of our elementary schools. It may safely be asserted that nothing can do more to awaken and stimulate the perceptive and creative faculties of the young than modelling, and it is really a mistake wrought with great mischief to ignore it.

No undervaluation of the art of drawing is here for a moment intended ; but can it be questioned that this art has too long been restricted to the mere mechanical imitation of fine engraved lines and neatness of by-symmetrical arrangements, or that the fatal “india-rubber” has dominated it to its injury, causing loss of feeling, freedom, and interest, as well as a prodigious waste of time?

Who that has struggled with a class of beginners in drawing through all the difficulties of hard pencils, rubber, pins, and paper, for the regulation requirements, has not felt that there was a more excellent way, and that the hand and eye should be trained first in a freer “medium” before paper and pencils are used ? (Plates 7—11.)

Delicacy and purity of line, the appreciation of subtleties of form and proportion, belong to a later development and to the more educated eye, and when insisted upon at too early a stage they only discourage the pupil and defeat their own object.

Drawing is not an end in itself, but the means to an end, which is the expression of original ideas. It is hoped that the "Plastic Method" will do something to make the attainment of this great end simpler; for while subserving all requirements as a perfect modelling material, "Plasticine" is capable of equal use and facility in drawing, and by means of the flexible stilus which in itself is a finger in miniature, the greatest freedom and variety of line can be produced. Errors may be perfectly and instantly obliterated by a mere touch with the reverse end of the stilus; in this respect the apparatus resembling the waxen tablets of the ancients. (Plates 12, 15, 18.)

First writing-exercises should be confined to the large and free sweep of letters drawn from the shoulder upon the sensitive surface of the Plasticine, if for no other reason than that the errors can be so easily erased, and a fresh attempt made without any second touches, or the consequent lowering effect which a troubled and blurred surface has upon the mind. A new beginning brightens the child's mind, while tinkering upon a drawing dulls it and wastes time.

The material is supremely sensitive to the touch, and nothing could be more conducive to developing the art-instincts of children than that they should be early

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familiarized with such a responsive and expressive vehicle, learning its capabilities, possibilities, and charms. Every encouragement should therefore be given to the spontaneous handling of the Plasticine and its manipulation into any natural form or device which pleases the fancy. (Plates 35, 36.)

Such an introduction into Art will have a beneficial and elevating influence as opposed to the cramping effect of much of the present systems which stamps a mechanical impression into the minds of children at the outset of their career.

The matter of scale is here of importance. What may be easy to the adult may be too difficult for accomplishment by children's fingers, simply on account of size; exercises should therefore always be in due relation to the size and physical ability of the children.

The finger manipulation should be begun by pressing, squeezing, and nipping the material, rather than by dragging and modelling. Irregular or imperfect forms should be avoided, such as lumps of coal, stones, old shoes, etc.; these are not good objects for basing instruction upon. Beautiful shapes placed constantly before the eye, and attention called to them by the teacher, with a simple analysis of parts, educate the eye and mind to a sense of beauty, and have a powerful and lasting influence.

So also, perfect familiarity with the square, the equilateral triangle, and the circle, forms an unconscious standard in the mind, and serves to detect errors; for, although mathematical exactness should not always be expected or insisted upon, the very highest standard of right should never be lost sight of.

Language and music reach us only through the medium of the ear; the appeal is directly to that organ. So the plastic and graphic arts should address themselves directly to the eye, ear instruction being regarded as altogether secondary.

The endeavour in the "Plastic Method" has been to have as little recourse as possible to precise and intricate printed directions, necessitating the constant supervision of the teacher, but to let each lesson appeal to the eye as complete in itself, being made *self-explanatory* by a series of progressive stages of advancement up to the finished work. (Plates 38—43, 52, &c.)

The "Plastic Method" in the elementary school course is adapted to the standards as far as possible, and aims at the encouragement of such exercises as will give control to the fingers, hand, and arm, power and delicacy to the sense of touch, the eye meanwhile being gradually educated to accuracy of proportion by the arrangement of definite

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touches upon a geometrical basis formed by the pupils themselves. (Plates 11—14, 24, 25.) Ruled lines and chequered work are unnecessary ; they not only strain and confuse the eye, but reduce art work from the first conception in the child's mind to a dead drudgery akin to Berlin wool work. All that is requisite is secured in the "Plastic Method" by the employment of a few common tools, used first with simple pressure, but affording latitude from the very initial stage for original treatment, and the addition of hand-modelling upon the bases of form created by the pupils themselves. The use of modelling tools proper is reserved for a later period.

The forms which at first are simply "pressed" and touched may be gradually elaborated to greater complexity by adding more material, or fingering. In this way the art of modelling comes into all the exercises, elementary or advanced, and forms the essential element of it. (Plates 26—40.)

To effect this in a practical manner for school use, a simple and inexpensive apparatus has been invented, saving both time and trouble on the part of teacher and class. Nor is the expense of school management materially increased, as the apparatus and material do not wear out, but can be used again and again, while the employment of outside experts, though desirable, is not *absolutely* essential.



Thus a universally expressed want, for a suitable *manual* employment adapted to all the classes in the elementary school, is met.

In the examples put before the pupil one of the points relied upon is that they shall appear exactly as they left the hand of the artist, retaining their true *Plastic* characteristics, without any of that mechanical finishing and perfecting of surface and form attained by instruments beyond the power and possession of the student, or by the devotion of an impossible amount of time. The machine-finish of casts and models not only hinders many pupils in the study of modelling, but deters others from essaying it at all. (Plates 34 *a*, *b*, *c*, 49—52.)

Another object is that the forms, being simple and rudimentary, should serve generally as suggestions rather than as exact studies, to be reproduced by the clever pupils; for it must not be forgotten that the art of original designing in the material itself should be encouraged in all the exercises, even for the youngest child in the class. A little difference in the proportion or relief chosen, a more or less varying pressure, the addition of a little more or less detail or elaboration here and there, and a new design is the result; and when any degree of steadiness, neatness, and accuracy are attained, they should

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be regarded as suggestions and *motifs* only. (Plates 24—45.)

As much as possible the left hand should have a share in the execution of the work, for experience has shown that *it* may be trained as well as the right to the very greatest dexterity.

The claim is deserving of consideration that by the use of Plasticine, and the modelling apparatus employed therewith, the eyesight of the pupil is not tried in anything like the same degree as with other materials, and this on many grounds. The grey colour of the material is itself agreeable and soothing to the eye compared with the excessive strain caused by the constant use of white paper. The close netline work of kindergarten drawing can be dispensed with, the actual lines when drawn or written are broader and freer, the standing posture or upright sitting, with ability to hold the “hand-desk” in the left hand, enables the learner to adapt the distance to the focus of his own eyesight without any stooping or contracting of the chest. The work may be kept constantly at right angles to the vision instead of obliquely, and it also permits the worker to adapt himself to whatever conditions of light the room may afford by simply turning his body in the right direction. As light and shade are the very essentials of

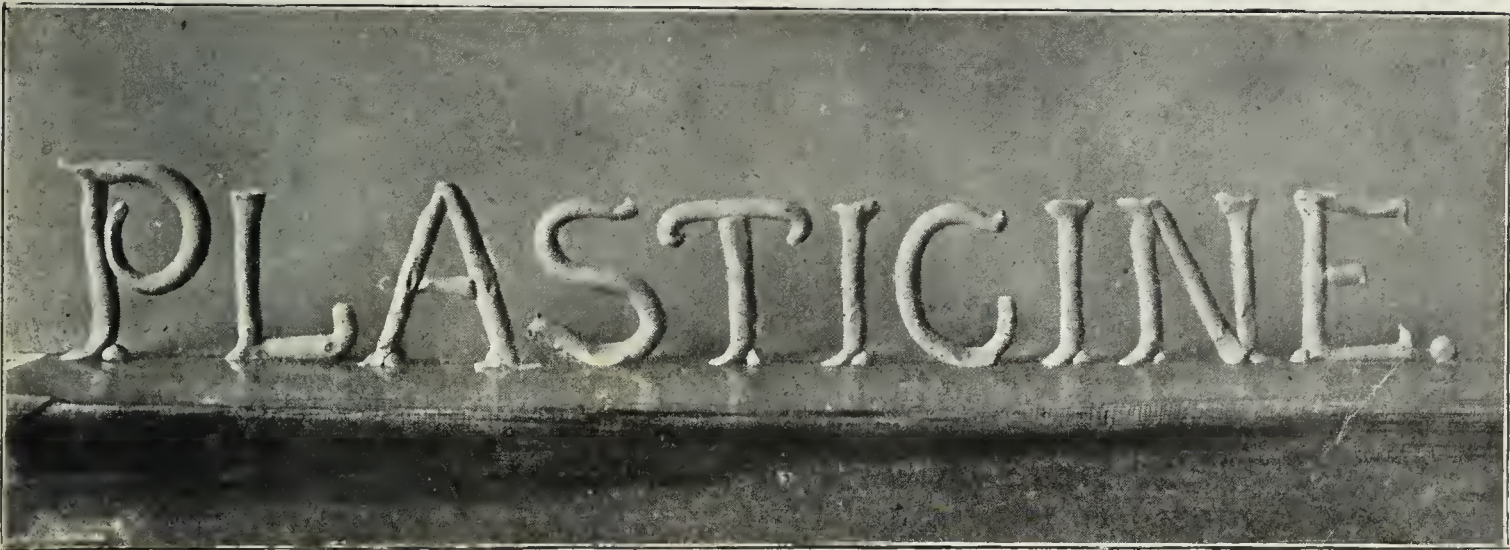
modelling, it is obvious that without the proper light to bring out the form, giving projection and the impression of solidity, the work is flat, weak, and unsatisfactory.

These are points not unworthy of attention in the face of recent statements in regard to the growing defective eyesight of children in elementary schools, not only in England but on the Continent, United States, and the Colonies, and if only the use of so much white paper work could be deferred for a couple of years, the gain would be distinctly appreciable in the relief to the eyesight of the young pupils.

It has only been possible in an introduction like the present to enumerate a few of the advantages possessed by Plasticine over all other materials at present used in modelling.

As the student advances in his study of this absorbing art he will constantly be discovering new pleasures and delights in its application, and his verdict must be, as the ever-increasing prospect opens out before his eyes, that "the half was not told him."





*(Harbutt's Plastic Method.)*

No. 56.

## “PLASTICINE.”

PLASTICINE is a specially prepared composition which possesses the permanent ductility and firmness of wax, and forms a perfect substitute for wet clay and the greasy Plastillinas. It has only been perfected after many experiments. The following are some of its advantages :—

1. Its ductility is permanent, being unaffected by heat, dryness, damp, cold, or time ; the longer it is used the greater its utility becomes. These qualities specially recommend it for use in hot climates.

2. Its plasticity is greatly superior to that of the best modelling clay, or wax ; while it is tenacious in form, it is responsive to the touch.

3. It requires no damping or covering with wet cloths, which destroys the finer modelled parts and causes much loss of time.

4. In sculptors' work it effects economy and saves its cost in the expense of moulding and casting before chiselling in marble, as the firmness of the Plasticine permits of pointing. Attendant and fires in the winter time, to prevent the destruction of work by frosts, are unnecessary. In drapery studies it is invaluable both for modelling the figure first and for draping it afterwards; also for trying experiments and testing effect and suitability of work on a small scale.

5. In colour it approaches ordinary clay, being of a greenish grey. It is clean and pleasant to the touch; does not clog upon the fingers or tools, nor grease the clothes; causes neither dust when dry, nor muddy marks when wet.

6. It permits of casting either by means of plaster or gelatine, and thus secures extreme delicacy and beauty even in the finer undercut portions of a work.

7. Its ductility and elasticity permit of its being spread very thinly over prepared paper, incised or with slight relief designs, and preserved in a roll for any length of time.

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These qualities, together with the small cost at which it is now possible to produce Plasticine, have made practicable several new developments in art-teaching in technical and other schools, all of which are embodied in “Harbutt’s Plastic Method.”

An objection to wet clay is that unless it receives great attention and is kept scrupulously clean, both as to the case it is kept in and the wet cloths covering it, it is liable to emit disagreeable odours, and it is possible also that being handled indiscriminately by many hands, infectious diseases may be conveyed and spread in a school.

In Plasticine these dangers are entirely absent, as in the use of it in elementary schools, each pupil might be put in possession of a certain quantity of the material—say a quarter to half a pound—for their own use exclusively, and these portions might be kept on the school premises in numbered boxes with the tools. In middle-class schools the pupils purchase and retain their own Plasticine as they would other school material.

The following precautions should be observed in using Plasticine: it must not be used upon absorbent surfaces such as wood, card, slate, stone, &c., unless prepared first by several applications of a solution of shellac or French polish.

Glass and glazed tiles are not suitable to work upon where very thin grounds are required for writing, drawing, and incised designs, but for some phases of modelling they are found suitable.

When stored away Plasticine should be kept in glazed earthenware or tin boxes, and protected from dust and heat ; under such circumstances it will keep for years and suffer no deterioration, but rather improve in its special working qualities.

Every pupil should be provided with a linen napkin or duster with which to rub the hands, or polish the surface to be worked on in certain conditions, washing not being necessary.

## NATURE.

It is highly desirable that modelling in full relief from natural forms should be encouraged at every stage of the pupil's progress, and go on simultaneously with the rendering of more abstract forms, as of letters, geometrical or conventional ornament, and drawings of animals, reptiles, and other living creatures.

The pupils should be specially directed as to what natural object they are expected to bring with them for the next lesson, so that a certain uniformity of method may be obtained in each successive demonstration.

The younger children may be allowed to impress leaves and other objects on the plasticine itself, trace around the contour, cut them out, or even to build up relief upon it, so that by frequent attempts at representation, and constant handling of the material, they may become thoroughly familiarized with it, and early learn to know that there are limitations even in the direction of imitation. This is a most



important piece of knowledge, and prepares the way for a correct idea of the *interpretation* of nature, and of what is called “conventional treatment.”

The attention should also be directed to articles of domestic use, such as the house candle-stick, lamp, flower-pot, bottles, vases, &c., and endeavours made to model them in full relief from memory, or the pupils might be encouraged to make pencil sketches of the same at home, to model from at school, thus teaching them the practical application of drawing.

Visits to museums of natural history with a supply of Plasticine for the purpose of study would afford valuable stimulus to observation.

## COLOUR.

At an early stage, for the Kindergarten, colour may be introduced. The plasticine will take powder colours very readily, as well as some of the bronzes. These will serve to still more interest the young students, and give a realistic aspect to their work.

The colours can be dusted over, or brushed on with a large camel-hair brush, and do not impair the further use of the material, beyond altering the colour somewhat when worked up again—the mess and trouble of oil and water colours is thus got rid of.

## SCULPTORS' WORK.

THIS really lies beyond the scope of the present volume, but may be briefly alluded to in passing. Once its full capabilities are known, Plasticine will go far to supersede the use of clay altogether; so many advantages attend its use, even in the most colossal works. The following considerations show that the cost of the material may soon be saved : (*a.*) The cost of taking a plaster cast from the clay model is unnecessary, the plasticine possessing sufficient firmness to admit of pointing. It is even fit for exhibition purposes immediately after it leaves the artist's hand; (*b.*) the attendant required to constantly watch and damp the clay can be dispensed with; (*c.*) as also his presence to keep the fires going in the winter, in order to prevent the frost from ruining the work; (*d.*) a much lighter building up of framework suffices; (*e.*) there is no shrinkage or distortion from drying or other cause, as in clay; (*f.*) there is no covering with damp



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cloths to rub the crisp and finer edges away, or spoil the finished surfaces. Gelatine moulds can be taken direct from the plasticine, thus preserving the most delicate undercutting. The model, moreover, is always in a fit and inviting condition for immediate work in all weathers, and will not fall to pieces or disappoint the operator in the way clay does so frequently. Undoubtedly these advantages alone will secure for plasticine the recognition it is so fully entitled to.

For painters who desire slightly and quickly modelled figures in any pose for the purpose of a cast of drapery, or of displaying the folds to paint from, with light and shade and foreshortening in action, &c., plasticine is a perfect vehicle for carrying out their ideas. It is available always at a moment's notice without any of the dirt, discomforts, and delay attending the use of wet clay; and having no affinity with water, starch-wetted drapery can be employed upon the figures, to get peculiar effects in folds, &c., which, when dry, are not easily disarranged.

## OTHER USES FOR PLASTICINE.

IN the teaching of solid geometry and interpenetration of solids, model, and mechanical drawing, &c.—it will be found of great assistance to the teacher, if each pupil has a small quantity of plasticine for the purpose of making miniature models, the better to realize the required position of solids, their traces and planes, and also for trying sections.

In botany, models of plants, fruit, and seed vessels, with various sections, might be required as an exercise for impressing facts upon the mind and increasing the interest. The ability to treat maps in relief would invest the study of geography with a new interest, and stimulate the older scholars to render the topographical features of the neighbourhood in which they live. In this way the local hills, valleys, &c., &c., could be modelled more or less accurately, according to the advancement made in scale drawing and geometry, and water poured on to represent rivers, lakes, and oceans. A cast in plaster by means

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of the casting frame could afterwards be easily taken of the relief, and this again coloured. When carefully done, such casts have a high educational value, and are worthy of preservation in the school.

Wood and stone carvers should always have a supply at hand to try the effect of light and shade of any new design; they would derive suggestions and new ideas, by subordinating their technique to the plastic conditions of the material, and following in the strongest lines of its possibilities.

In fact, if all relief carvers would *design* in this material, rather than on paper, they would find quite a different and improved spirit animate their work.

For decorators and carvers, whose work is intended to be seen at a height or at a distance, and in just relationship with other elements in a scheme of decoration, what expedient could be more valuable than to be able to model detail to its proper proportion, and to then try its effect in actual position? This the plasticine would enable the sculptor or architect to do with the greatest ease and celerity, so that any weakness of light or shade, any errors in scale or effect or composition of line, could be corrected.

Plasticine is already used instead of clay with the

greatest success and effect in several of the practical arts and manufactures, and may be seen applied to that of scientific boot-making, in the Guild classes, where it is used for the purposes of producing moulds and casts of feet for the correct construction of lasts.

After the actual plaster mould has been taken, the plasticine may be pressed in, and the various sections taken to demonstrate to the workmen the exact shape required.

In plasterers' work, again, its use is seen in the rapid designing and executing of modelled panels, borders, friezes, &c., either taking gelatine moulds from them and casting from them, or where lower relief is required, working in *intaglio* or sunk patterns, on the plasticine, and taking casts direct from it. These casts show up in relief; a specimen of such work is shown in number 55.

A great variety of effect is capable of expression by this means.

To the civil engineer, prospector, or pioneer, the hand-desk and frame would prove invaluable, as they could model on the spot with the same ease that an outline sketch could be made—conveying such data at a glance as would otherwise involve much descriptive writing. The work could be rendered in plaster afterwards, and replicas made.

Hill-climbers would also find a fresh interest in modelling

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mountain routes and views, with glaciers, precipices, passes, and summits, after the dangers of actual explorations were over. Such tangible records, executed by the hand of the traveller himself, would possess a high scientific and topographical value, beside affording the very greatest reminiscent pleasure to the modeller himself.

For black-board demonstration Plasticine possesses many possibilities, as also for the purpose of teaching military fortification, surveying, and engineering, instead of using wet sand.

The specialized knowledge and skill of the expert will readily develop the use of the material in these and many other directions.

## PLASTER CASTING.

THE following concise directions, it is hoped, will enable the student of ordinary intelligence to master the art of plaster casting, using the few appliances invented to simplify the process in the Plastic Method.

Take out the movable panel from the casting-frame, place upon it the tablet with the modelled work, replace it upon the frame and re-tighten the buttons. Next make a little lather with common soft soap and water in a cup, then, with a soft mop brush, wash gently over the plasticine modelling, rinsing off with clean water, and carefully mopping up all excess of moisture. Place the four zincs in position, *vide* illustration page 29, and secure them with the wire clips.

The frame is now ready for the plaster to be poured in.

Take a breakfast-cup three parts full of clean water, gently drop into it some fine Italian plaster until it just shows at the surface, *then* stir or gently agitate the water



with a spoon, mixing thoroughly but quickly until of an equal consistency, and pour it steadily over all the modelled work until it is all well covered; shake it about, and pour it back into the cup. Now work what is left into all the hollows and depressions of the work, with a camel-hair brush. Sometimes by merely blowing with the breath you will be able to force the plaster into the deeper recesses where it does not readily flow.

While doing this the rest of the plaster in the cup may have become a little stiffer, but be expeditious, and pour it quickly upon the model to a depth of at least half an inch, shake it a little to level it, then place it upon a perfectly horizontal surface, and do not touch it again for half an hour, by which time the cast will have become "hard set."

The zinc walls are now pulled out, the panel removed, as also the cardboard with the modelled work. If there is no undercutting the plaster mould will be easily separated from the plasticine, leaving the original work almost uninjured.

The mould is then examined carefully so as to remove any undesired projections (which means undercutting in the original work); unless this is done, the cast will not separate from the mould without being broken in pieces.

The mould should next be well washed with the soft



soap lather and afterwards with clean water, care being taken that no scum or sediment is left in any of the recesses of the work. Soft sponge or brushes may be used for this purpose.

The panel and mould are now replaced in the frame, as also are the zinc walls with their springs, and the work is ready for casting.

Gaps or large separations left between the mould and the zincs for the liquid plaster to escape into should be filled up by a little plasticine—the mixing of the plaster proceeded with as before, see that there are no undissolved lumps in it, pour twice into mould, shake, and blow or brush into the deeper recesses and crevices, place upon a level surface for half an hour before touching, and the cast is ready for removal.

The panel is then taken out, and if there has been no undercutting, the cast and mould will easily separate by inserting the long edge of a dinner knife into the line of division and tapping it smartly with a light hammer; this should be done gradually on each of the four sides.

The cast possesses a fine surface or skin which, if possible, should not be interfered with by scratching, sandpapering, or any subsequent work; but frequently both mould and cast are largely worked upon, and a high surface

finish and detail added, by means of fine steel, wood or bone instruments, for the purpose of taking other moulds in plaster or gelatine from them.

A pleasing quality is given to the surface of the fresh plaster cast by dusting a little French chalk over it, or by warming it at a fire and applying a preparation of white wax and turpentine by means of a hog-hair brush. Both methods preserve the surface from dust and give to it a smooth, marble-like finish.

If a mould has been allowed to become quite dry, it should be soaked in water for a few hours before attempting to take a cast from it, and then the processes of soft-soaping, etc., gone through. Instead of soft soap, sweet oil, in which about a third of its bulk of tallow has been dissolved, is preferred by many to stop the absorption of the mould. This should be applied very thinly by means of a large hog-hair brush, every time a fresh cast is taken.

Galvanized or copper wire or soft hemp string for suspending the cast may be inserted in the soft plaster of the cast before setting.

Mention has already been made of "undercutting." This consists of the overhanging modelled portions of the work, which prevent the plasticine coming readily out of the

mould, and renders impossible the liberation of the cast except by breaking the mould into small pieces with chisel and hammer.

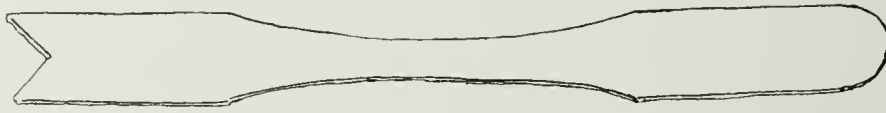
If the undercutting has been carefully avoided, or filled up in the work, or removed in the mould, the result is a "safe mould," from which any number of casts may be made.

If the necessities of the work require that hollows and undercutting be allowed to remain for the production of bolder relief, and more vigorous light and shade, only one cast can be made from the plaster mould, which is then called a "waste mould," because it is entirely destroyed in the process of getting the cast free. Gelatine may, however, be used in place of plaster as a mould, which allows of almost any amount of undercutting to come away uninjured. This power of making gelatine moulds upon Plasticine is a great advantage, and cannot be done on clay.

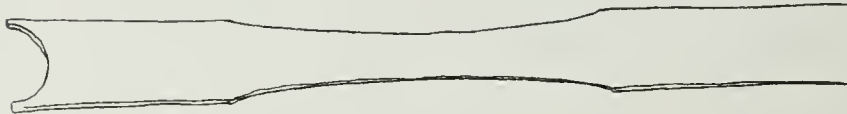
The manner of using it is to take French gelatine at about 1s. per lb., dip the sheets into water for a minute, drain, place in a vessel surrounded by hot water, and allow to boil; when the gelatine is all melted, stir vigorously with a stick to an equal consistency, pour upon the modelled work to a depth of about an inch and a quarter, and allow some hours for cooling.

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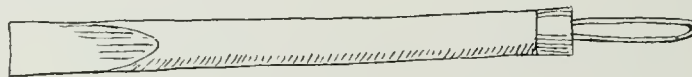
A third kind is called the "piece mould," as it is built up of several pieces which are retained in position by an outside casing of plaster. This allows of any projection even to full relief, or modelling in the round, to be safely cast. The art of piece moulding, however, comes more into the province of the skilled workman, and is best learned by a practical lesson—in a workshop.



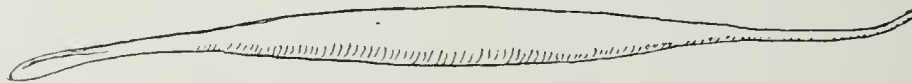
No 1



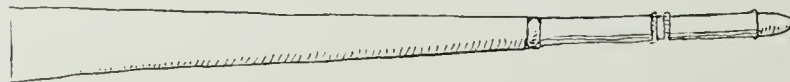
No 2



No 3



No 4



No 5

THE TOOLS. HARBUTT'S PLASTIC METHOD.

## THE TOOLS.

THE fingers are the best tools, and in all the lessons their use is developed to the utmost; but for the infants and Kindergarten work, for the purpose of cultivating a sense of good form, accuracy, and neatness, three tools are allowed, two made of wood, Nos. 1 and 2, having four different shaped ends, chosen for their simple rudimentary character, and one, the flexible stylus (No. 5), with an indiarubber point. These are all that are necessary; they serve not only as the foundation for patterns when impressed and modified in various arrangements on the Plasticine, but also as the basis for greater development by the pressure and dragging of the finger in the act of modelling, and afford in their resulting combinations an early stimulus towards original design.

The rudimentary shapes selected are the square, the semicircle, and the angle. It is not advisable that compound forms be used, but that the number be restricted and



chosen solely for their educational value. These tools are numbered in the illustration Nos. 1 and 2. Every encouragement should be given the little ones to try to exhaust all the possible combinations in which they can be used for themselves, and by their own effort. This will have more effect in stimulating their interest and awakening their latent powers, than dragging them through all the details of a mechanical drill. It would be advisable, however, that the whole class should be at times required to give attention only to what the *teacher does*, rather than to what he *says*. To make such a lesson in accurate observation and understanding of real value, the teacher should come well prepared, with power to carry out the practical lesson in an orderly and workmanlike manner, avoiding all slovenly methods, and aiming at executing every movement and touch with certainty and precision, in full sight of the class. Object lessons which appeal to the eye influence the mind and intellect more directly than those addressed to the ear, and instruction is none the less valuable and certain because attended with little in the way of lecturing. Where words are used let them be very few, explicit, and well chosen.

When the pupils are older and more proficient, these simple shaped tools for the production of patterns are to be



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totally abandoned, and the use of the flexible stylus, the boxwood, and wire modelling tools should then be introduced (see illustration).

Here, again, the number of tools has been limited to the utmost, and four are all that are really essential for carrying out every variety of work shown in the accompanying illustrations. It is better in every way that the pupils should learn to master thoroughly the use of one tool only, than that they should be perplexed with the necessity of choice from several, and end by mastering none.

In dealing with large classes, it is impossible to strictly define the age period when the use of these tools and the introduction of advanced work may begin; no hard and fast lines need be drawn. It is claimed for the "plastic method" that the forward pupil need not be kept back or depressed by the backward ones in any class, no matter how large; but that greater latitude for individual ability and original work is possible with it than with any other system.

## TABLETS.

THE specially prepared tablets are the best for modelling upon, and for receiving the thin grounds for drawing and writing exercises. They are cut to a regulation size of  $9 \times 6\frac{1}{2}$  inches, so that the exhibition or examination work of a whole school can be safely stored or packed for transmission in arranged boxes; they also fit the hand-desks and other apparatus used. Stout tracing paper or cloth can also be used for modelling upon, and then the work is capable of being rolled if not in too high relief.

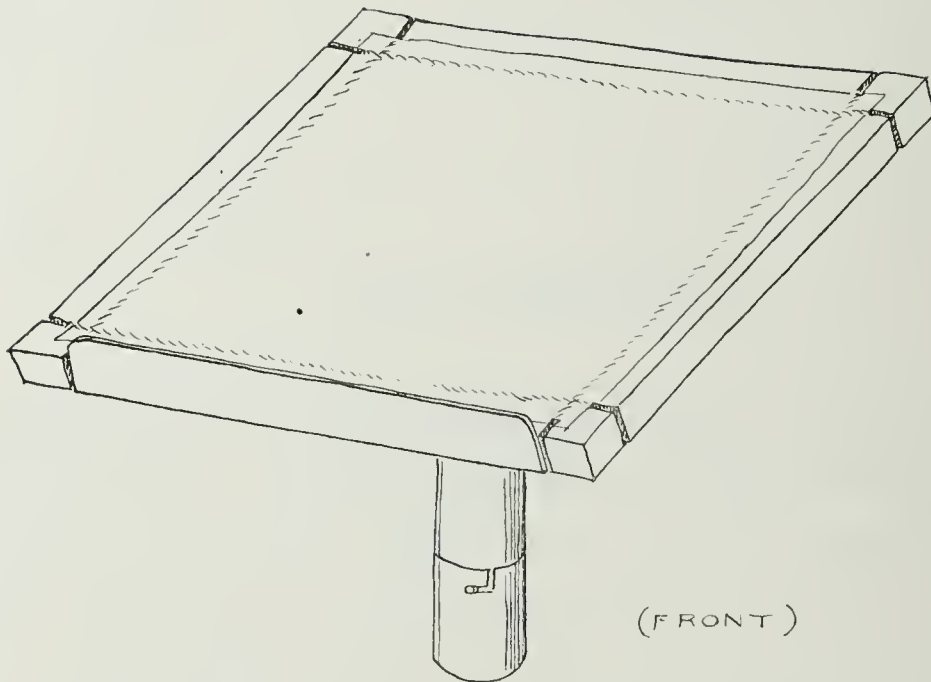
## THE HAND-DESK.

THIS has been designed to allow of the pupil holding the work in his hand, and to enable him to model or draw without other rest or table, either sitting or standing. This independent position permits of the best light possible being thrown on the work, whatever may be the limitations of the lighting arrangements. The hand-desk is also capable of being used at a convenient slope on the table or ordinary school desk.

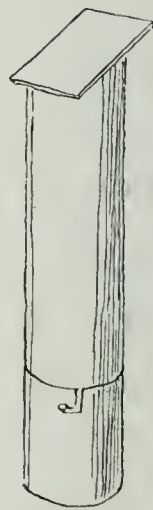
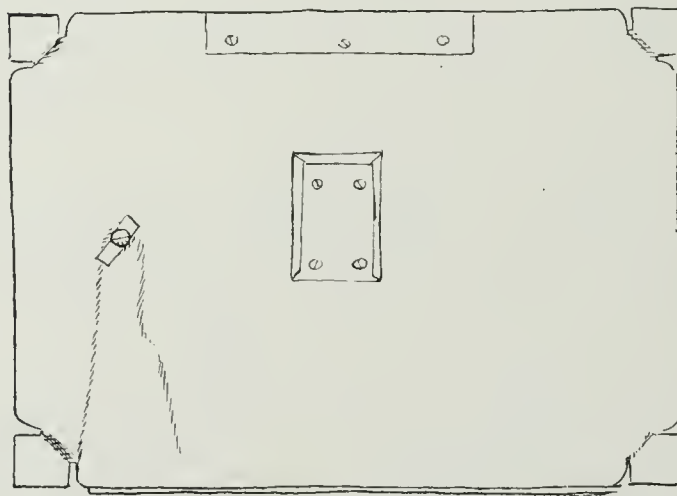
The arrangements for holding the tablet by a lace is intended to dispense with the necessity of pins, springs, etc., but they can be used if so desired.

The handle is a hollow tin case with a lid, which is made either fixed or removable (see illustration, page 26), and serves to hold the modelling tools together with a sufficient supply of Plasticine for the use of each pupil.

The advantages of the hand-desk are evident: (1) enabling a class in elementary drawing or modelling to stand or



(FRONT)



(BACK) AND LOOSE HANDLE

HAND-DESK.

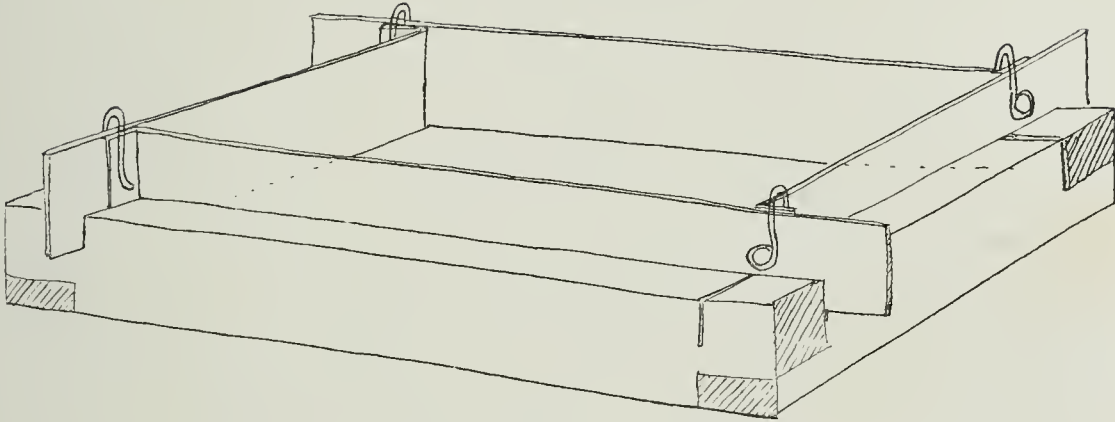
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sit in any position in any part of the room without the use of any other desk or appliance, an arrangement from which many conveniences must result ; (2) saving of time in getting a class to work and in dispersing for another study, there being little to clear away ; (3) utilizing whatever light is available by simply turning the body in that direction ; (4) encouraging the use of either hand in modelling, the left hand being as essential as the right in the manipulation of tool, board and material, and the two hands being thus intimately and responsively engaged upon the work in progress, as in the art of violin playing, the sympathy of movement and pressure between the two conduces to that freedom, delicacy, and firmness of touch which it is of supreme importance to cultivate in all arts and crafts.

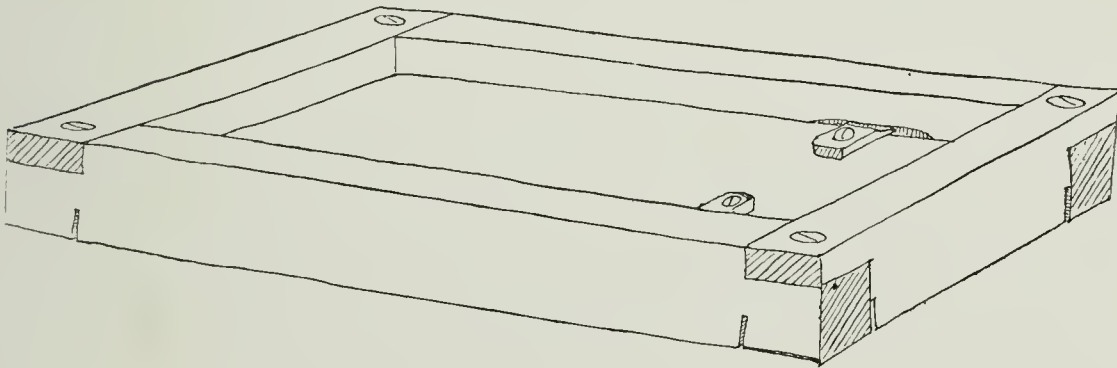
## THE CASTING FRAME.

THIS has a two-fold use, being adapted also for holding the tablets for modelling upon, as well as for casting. It consists of a hard wood frame, with a loose panel secured by buttons at the back and of a size sufficient to take the tablets. The front is grooved at the corners to admit the zinc walls which retain the liquid plaster or gelatine in the act of casting, the junctions being made water-tight by wire springs.

The principal use of the frame is in taking moulds from finished work, and again in taking casts from the mould itself—all of which is done very expeditiously and without any unnecessary disorder. The zincs, with their springs, form a patent attachment to the frame, and can be used separately for the casting of any shaped or sized panel up to the limit of their dimensions. A sheet of transparent celluloid accompanies each frame for the purpose of enabling the elementary classes to place an extra copy underneath to model upon.



CASTING FRAME AND ZINC ATTACHMENT.



BACK OF CASTING FRAME AND LOOSE PANEL.



## COPIES.

FOR the purpose of carrying out the teaching, by the "plastic method," in a systematic manner in any school, copies and casts have been prepared and graded as far as possible to correspond with the drawing standards.

The copies consist of photographic reproductions from actual modelled lessons. These are mounted on cardboard, and are of a uniform size.

The illustrations in this book are produced in a similar manner, and will give a good idea of the style and of the general character of the lessons, and of the field covered.

It is intended that each pupil shall have a copy to work from, the hand-desk or frame having clips for the purpose of retaining it so that it may be easily seen. Each lesson, except in the more advanced stages, is of a progressive, self-explanatory character, complete in itself. The finished study, and the various component parts which represent the progressive manner of manipulation, order of procedure,

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and building up, are presented in a complete series, and can be comprehended at a glance.

In this way most of the lessons partake of the nature of an individual demonstration by the master in the sight of the pupil in such a manner that his interest and emulation are at once aroused to go and do likewise. Step by step, touch by touch, the work proceeds in a self-evident manner. Synthesis and analysis go together, so that there is no unintelligent working in the dark at fragmentary elements, not knowing what the finished design is going to be ; the idea of the whole is present throughout, and the conception is formed in the mind as to the orderly manner of arriving at a result, the feeling of structure and construction satisfying together the eye and the mind.

The effect of this must be a permanent good, as it cultivates habitual method of judgment and analysis of complex form in a way that can never be forgotten.

## THE CASTS.

THE casts are taken by gelatine moulds from the models in Plasticine, and no attempt has been made to give them that objectionable machine finish which has been so much complained of. They all bear the impress of finger and hand work, and of such tools only as the pupil is expected to use.

Each pupil should be provided with one of the easier cards to work from, but it is not essential that each should have a cast. One set of casts or specimens of each of the different series should certainly, however, be in the possession of a school as examples and standards to be carried in the mind to work up to. Occasional inspection only of the actual school cast will serve to strengthen the memory and afford freer scope for the abilities of all, even of the most backward.

By the use of the photographic reproductions a greater latitude is afforded for individuality and independence,

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which, under the eye of the teacher, can easily be prevented from degenerating into license.

Slavish imitation of any cast is not required, but an intelligent rendering of it, aided by observation of the photographic representation. This should be encouraged.

## EXHIBITION CASES.

THE exhibition case for the protection of work from dust and injury while hanging on the school walls consists of a glazed frame with a movable back sufficiently far away from the glass front, to allow of the showing of high reliefs. A dozen specimens of the best work, selected from the various classes, should always be on view. A stimulus of this sort is necessary in every school; in modelling, it is disappointing and depressing to young people that their work should be instantly destroyed and lost sight of.

Children like to keep their work, besides which it interests their parents and friends. It is quite probable that very little of it will be thought worthy of casting, but if much time and interest have been spent in elaborating a special study, the pupil should at least have the privilege, if he so wishes, of retaining it, the cost of the material being so slight.

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If not subjected to violence, modelled Plasticine will keep upon the tablets without injury, change of colour, or loss of any of its plastic character, and may be freely cast from at any time.

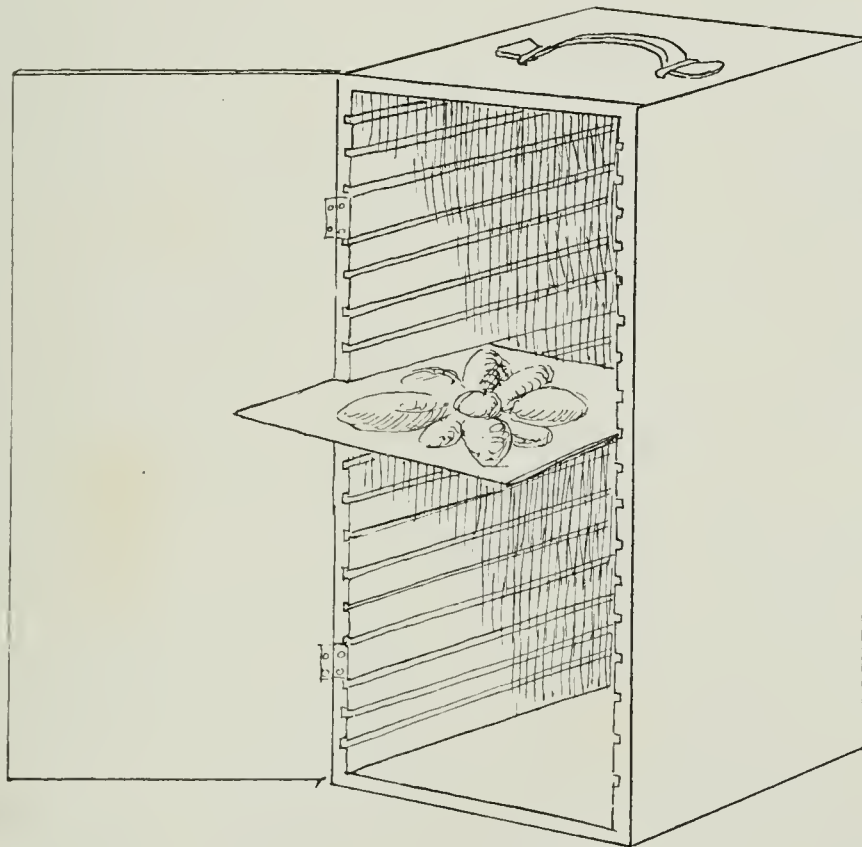
At least one exhibition case should be used for each class, and it will be found that nothing will serve to raise the standard of excellence, keep up the interest of the pupil, and put the teacher upon his mettle, more than the habitual selection of "Honours work" for exhibition in these cases.

## THE CABINET.

THE cabinet is a plain deal box, the interior of which is fitted with grooves like a photographic plate box, so that the tablets may be taken out easily with their modelled work either in high or low relief. Care should be taken that they are placed in the box in a perfectly horizontal position.

These cabinets are made to hold from twenty-five to fifty cardboards, and may be used to preserve work in progress from lesson to lesson ; and also, if necessary, as packing cases for the transmission of work to exhibitions or to examiners, &c.





CABINET FOR MODELLED WORK.

## REFERENCES TO ILLUSTRATIONS.

IN elementary and Kindergarten work it is not necessary to "lay a ground" upon the hand-desk, or tablet; if not for preservation the work may be done direct upon them, and scraped off after the lesson.

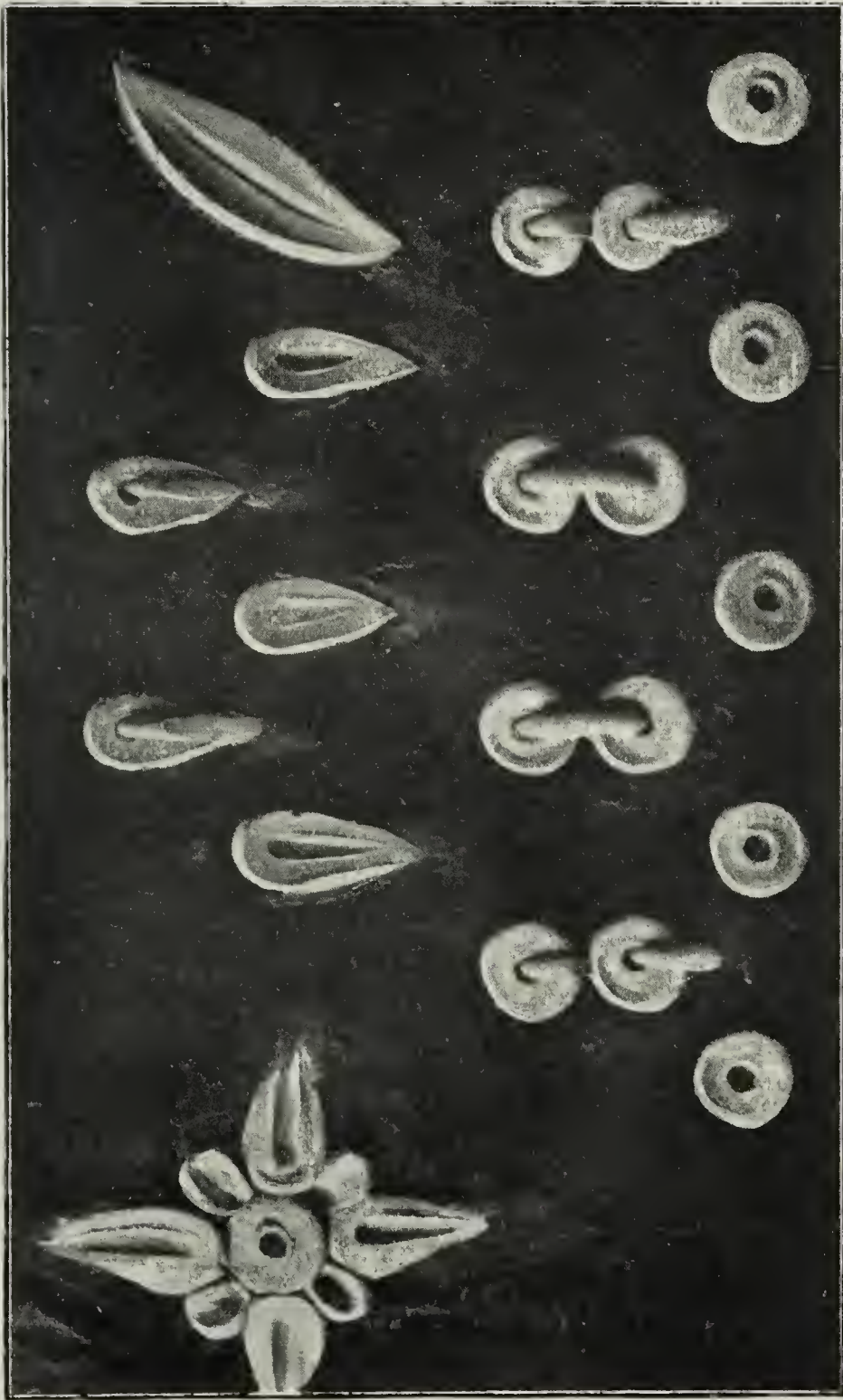
For first work this is the easiest and most readily performed, the result being clearer in form, and more precise, although it will lack that softness which incorporation into the "ground" secures. (Nos. 1, 2, 3, 4.)

The lessons being completely explanatory to the eye, it is not necessary to enter into detailed descriptions here, but for the use of the teacher printed directions for lessons will accompany the sets of copies and casts used.



(Harbut's) "Plastic Method."





*Plate 2.*

(Harbutt's "Plastic Method.")







(Harbutt's "Plastic Method.")

Page 109.

Plate 3.







Plate 4.

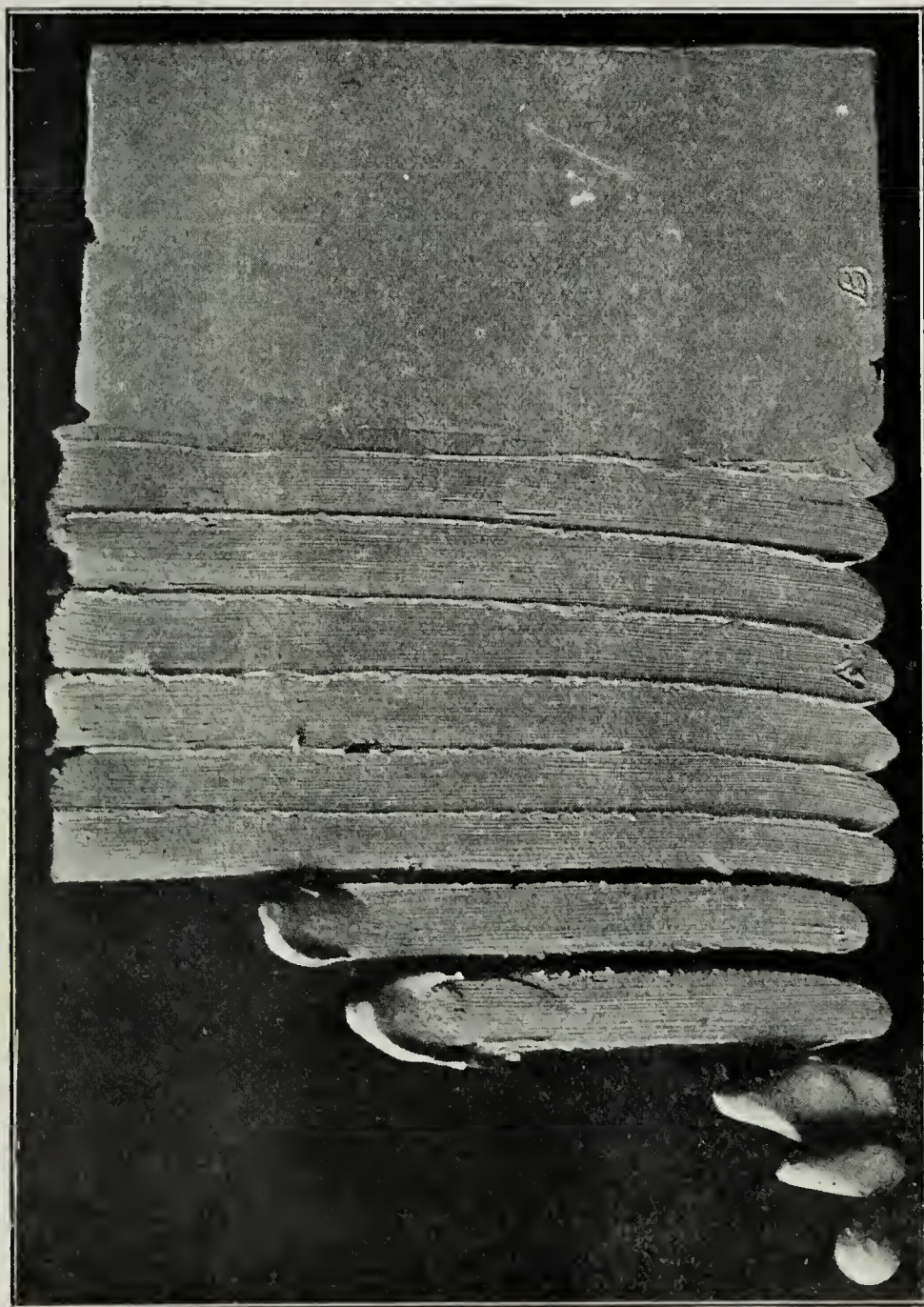
(Harbutt's "Plastic Method.")



For older children, and as subsequent practice, the same exercises as the foregoing may be used upon a "ground." This ground consists of a layer of Plasticine spread evenly and *thinly* over the cardboard as indicated in No. 5: Take a pellet about the size of a garden pea, make a roll of it between the finger and thumb, and carry it by a firm pressure in a line as far as it will go; repeat these lines side by side until the card is covered, then smooth with the flat tool and a slight rub with the finger. The thin ground so prepared should present a perfectly flat surface and be in a fit state for modelling upon, or for such writing and drawing exercises as Nos. 6, 7, 8, 9, 10, 11 and 12.





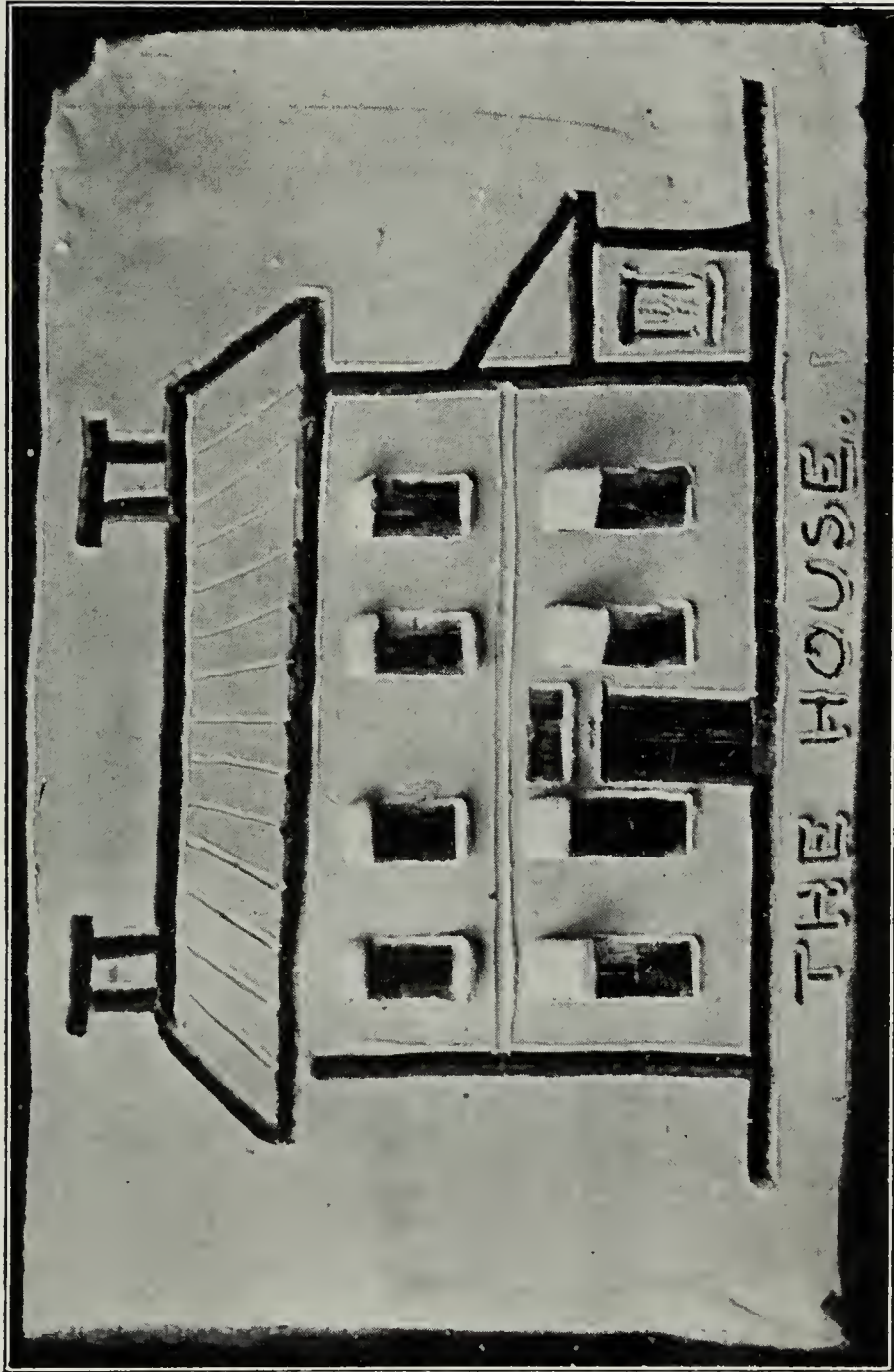


*Plate 5.*

*(Harbutt's "Plastic Method.")*







*Plate 6.*

*(Harbutt's "Plastic Method.")*



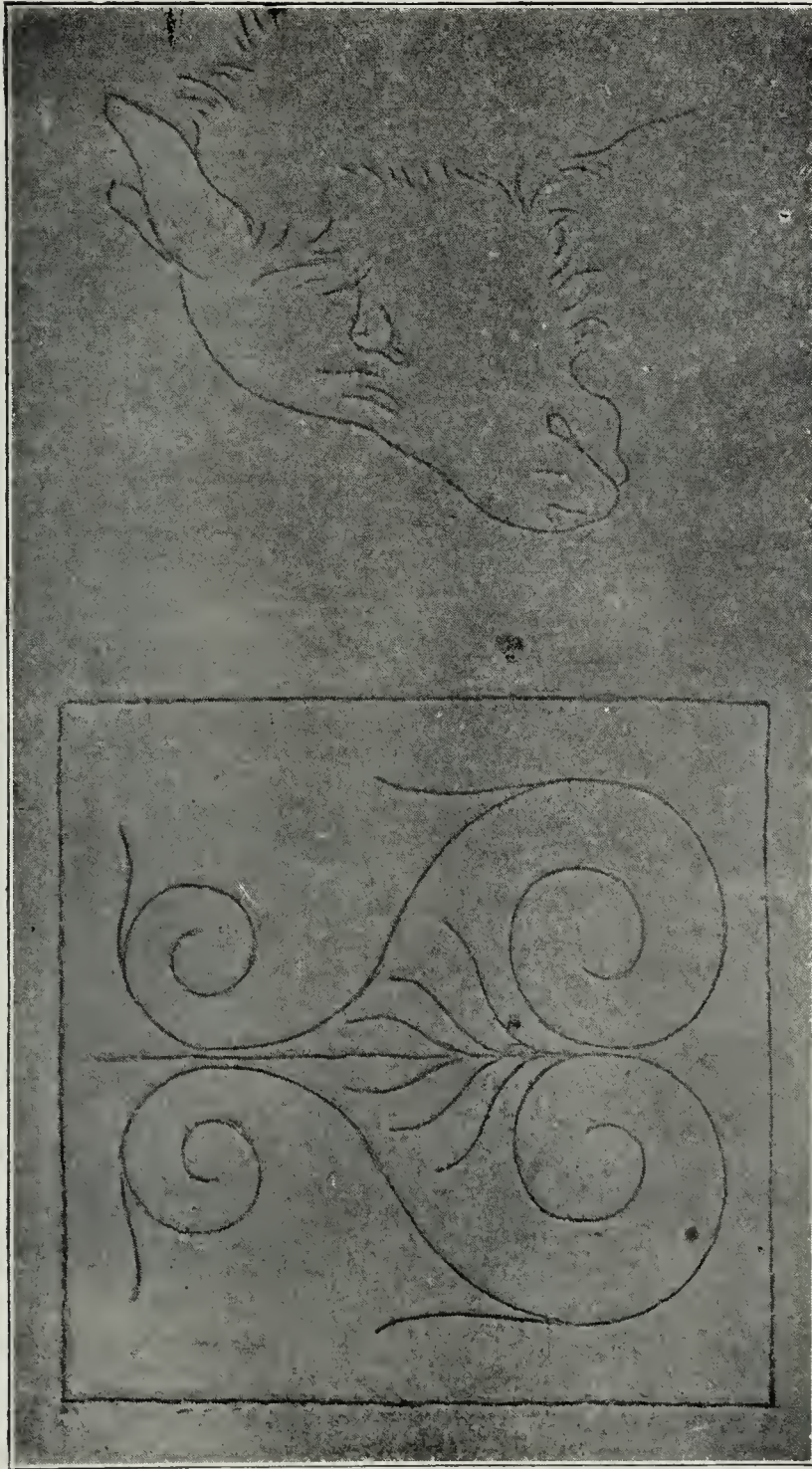


(Harbutt's "Plastic Method.")

Plate 7.



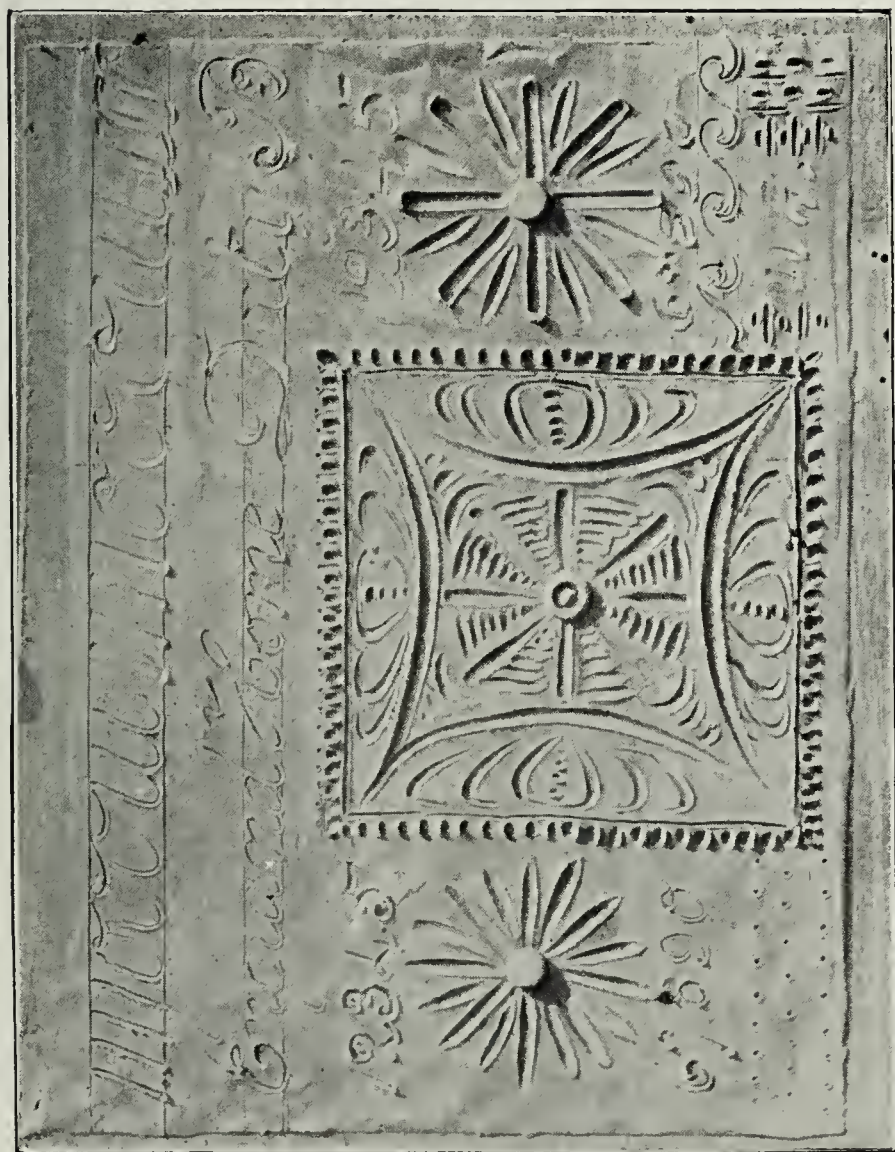




*Plate 8.*

*Harbutt's "Plastic Method."*)





(Harbutt's "Plastic Method.")





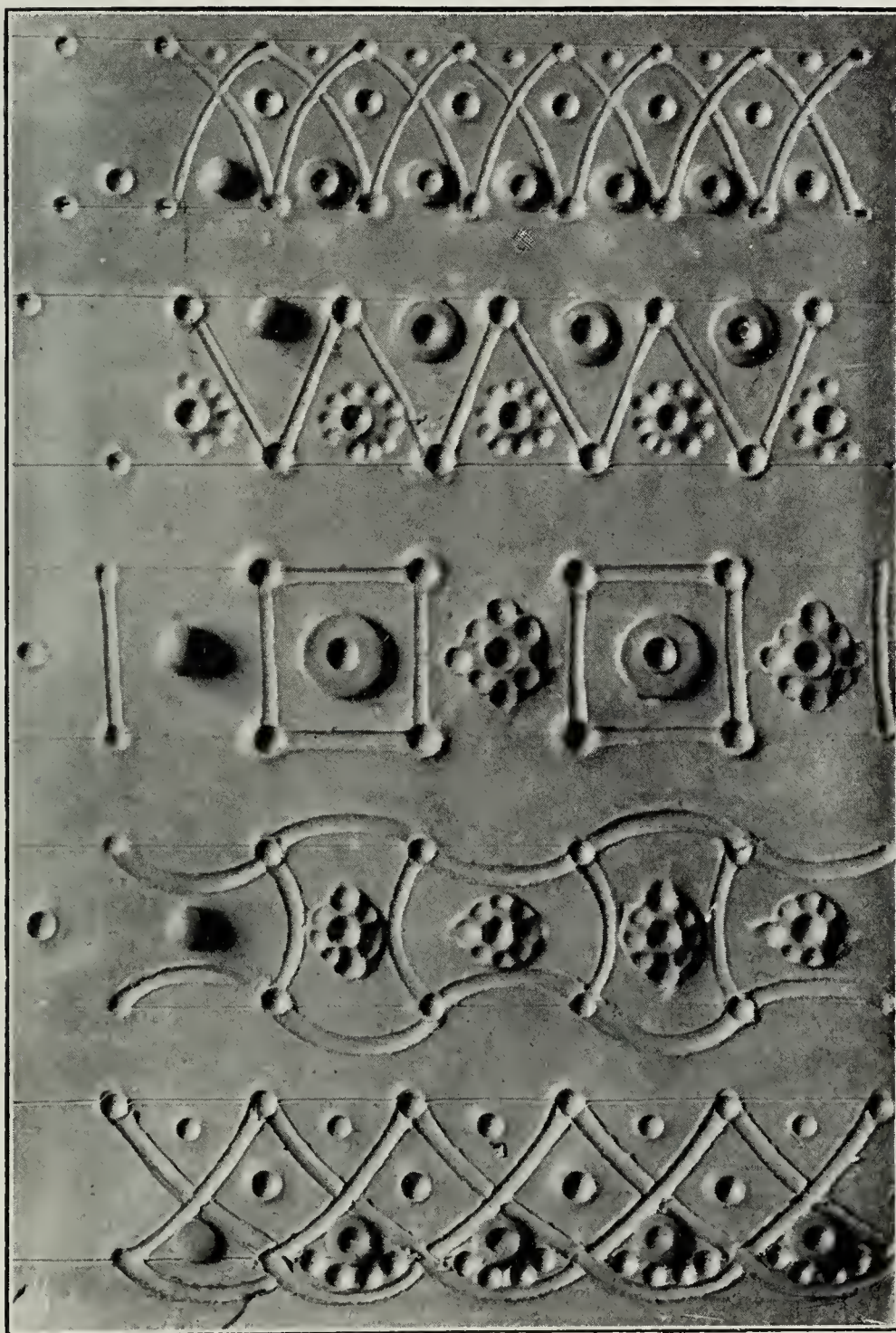


(Harbutt's "Plastic Method.") Page 110.

Plate 10.







(Harbuti's "Plastic Method.")

Plate 11.







(Harbutt's "Plastic Method.")

Plate 12.





In Nos. 13, 14, 15, 16, 17, and 18, the ground is laid slightly thicker to admit of the pressure of the finger or tool being exercised to cause greater relief as well as recession in the material.

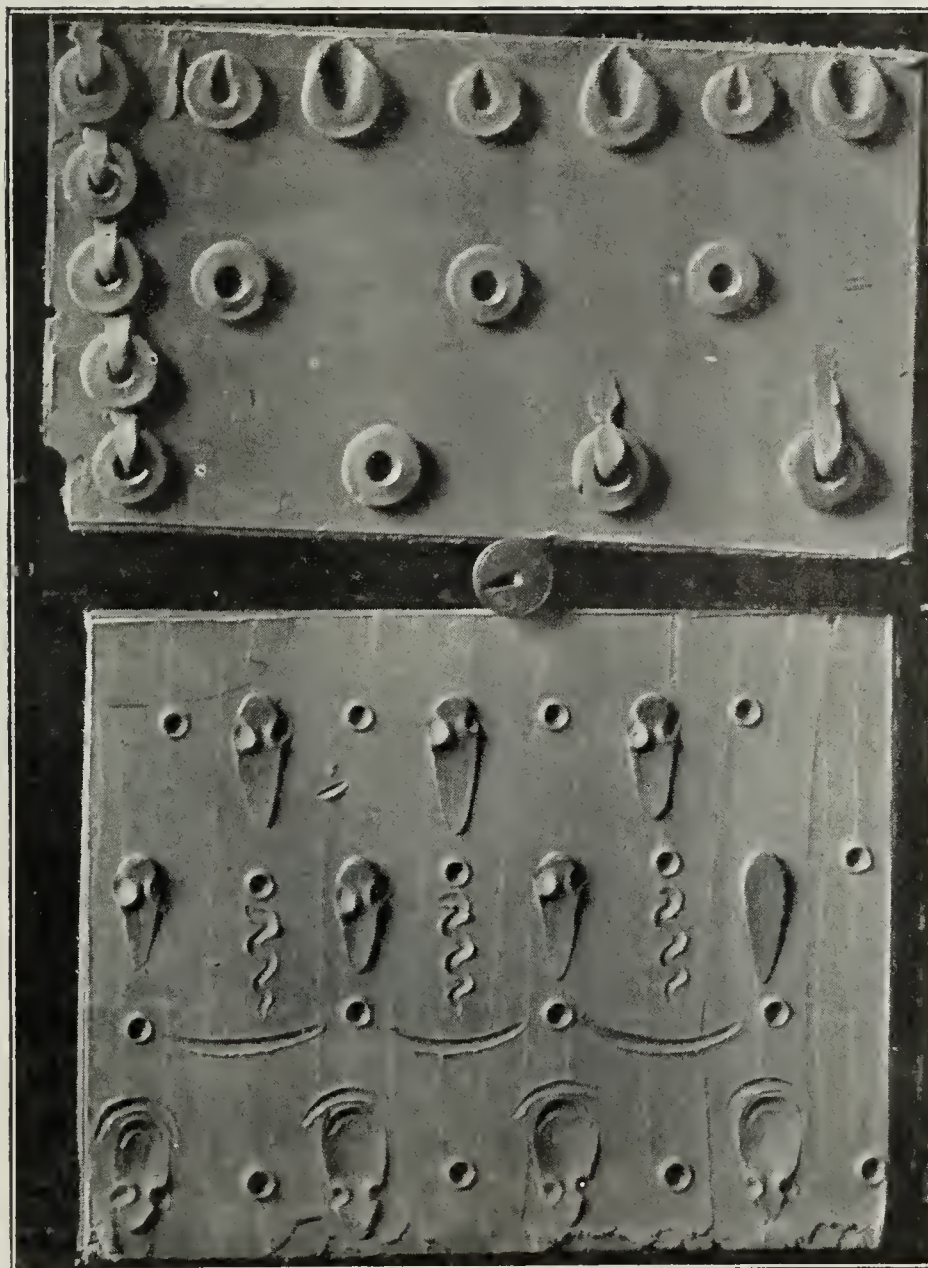




Plate 13.

(Harbutt's "Plastic Method.")





(Harbutt's "Plastic Method.")

Plate 14.







(Harbutt's "Plastic Method.")





*Plate 16.*

*Page 109.*

*(Harbutt's "Plastic Method.")*







(Harbutt's "Plastic Method.")

Plate 17.







(Harbutt's "Plastic Method.")

Plate 18.



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If modelling of greater relief and variety is desired, it is only necessary to lay a still thicker ground, which is done by increasing the size of the pellet, and pressing in a lighter manner than in the former, or by making a fine roll or rope of the Plasticine and flattening it with the thumb upon the card (see No. 19). A beginning is thus made for such borders and frames as Nos. 13, 16, 20, 21, 22, 23, 24 and 25, the patterns and designs being obtained by pressing and indenting the finger or tools into the material, such simple procedure affording an almost unlimited scope for developing new and original designs, which the cleverer pupils will have the opportunity of inventing after a little progress has been made.

The geometrically-shaped tools are limited in number and used only for specific purposes. In the last named exercises, for example, the two shapes upon the ends of No. 2 tool are used to obtain a great variety of correct or geometrical forms, upon which first efforts of modelling may be made. Complex shapes are not required: it is better to let the pupil develop his ingenuity by trying to exhaust all the possible combinations of a few elementary forms first. The use of these tools is afterwards dispensed with.

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The addition of finger modelling upon shaped tool work is a next step, but at all stages of the work the pupil should be encouraged to think and act for himself and to express his own ideas.

Nos. 20, 21, and 25 are produced by the same circular end of tool No. 2 only.

No. 22 by the same tool and the *pressure* of the forefinger.

No. 23 by the same tool and by pressure of the forefinger, and at the same time a *slow* downward dragging motion.

No. 26 (2) by the same tool and a scooping action of the finger ; 26 (3) same as in No. 23.

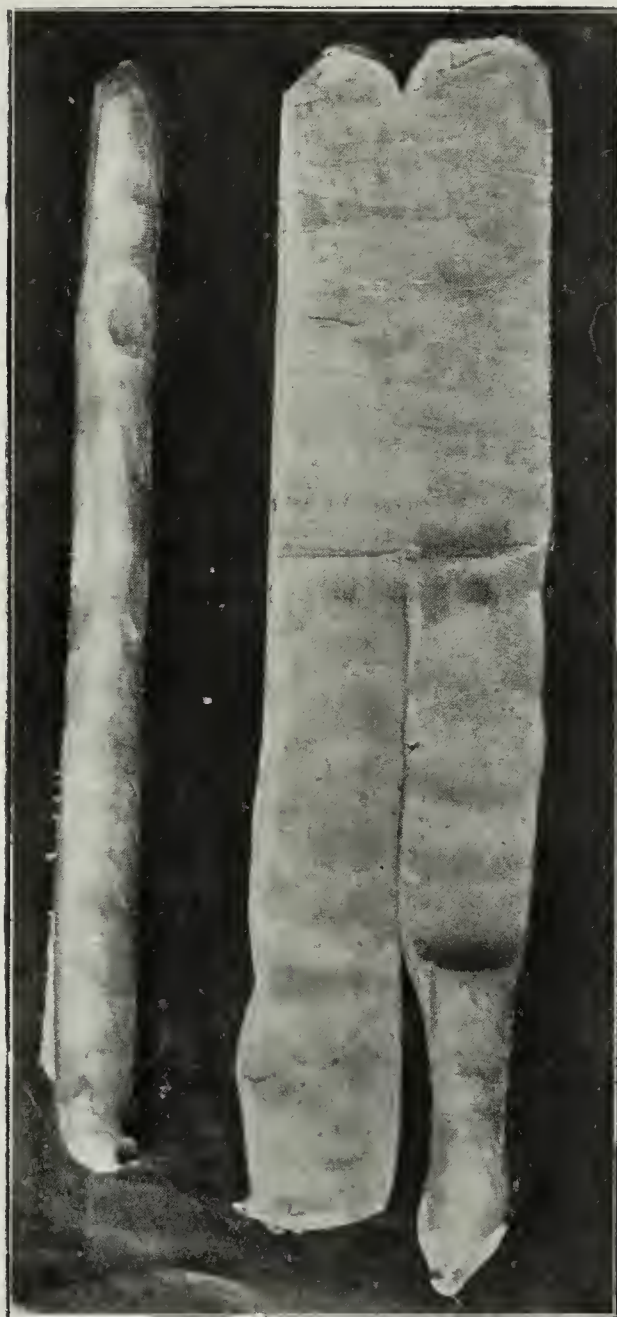
No. 24 a and b by the square end of tool No. 2, and a touch by the flexible stilus No. 5.

No. 24 c and d are identically the same forms but with the addition of a gentle touch of the forefinger.

No. 27 is produced by the combined shaped ends of tool No. 1.

Nos. 28 and 29 by the combinations of the shaped ends of tool No 2 and a little finger work.



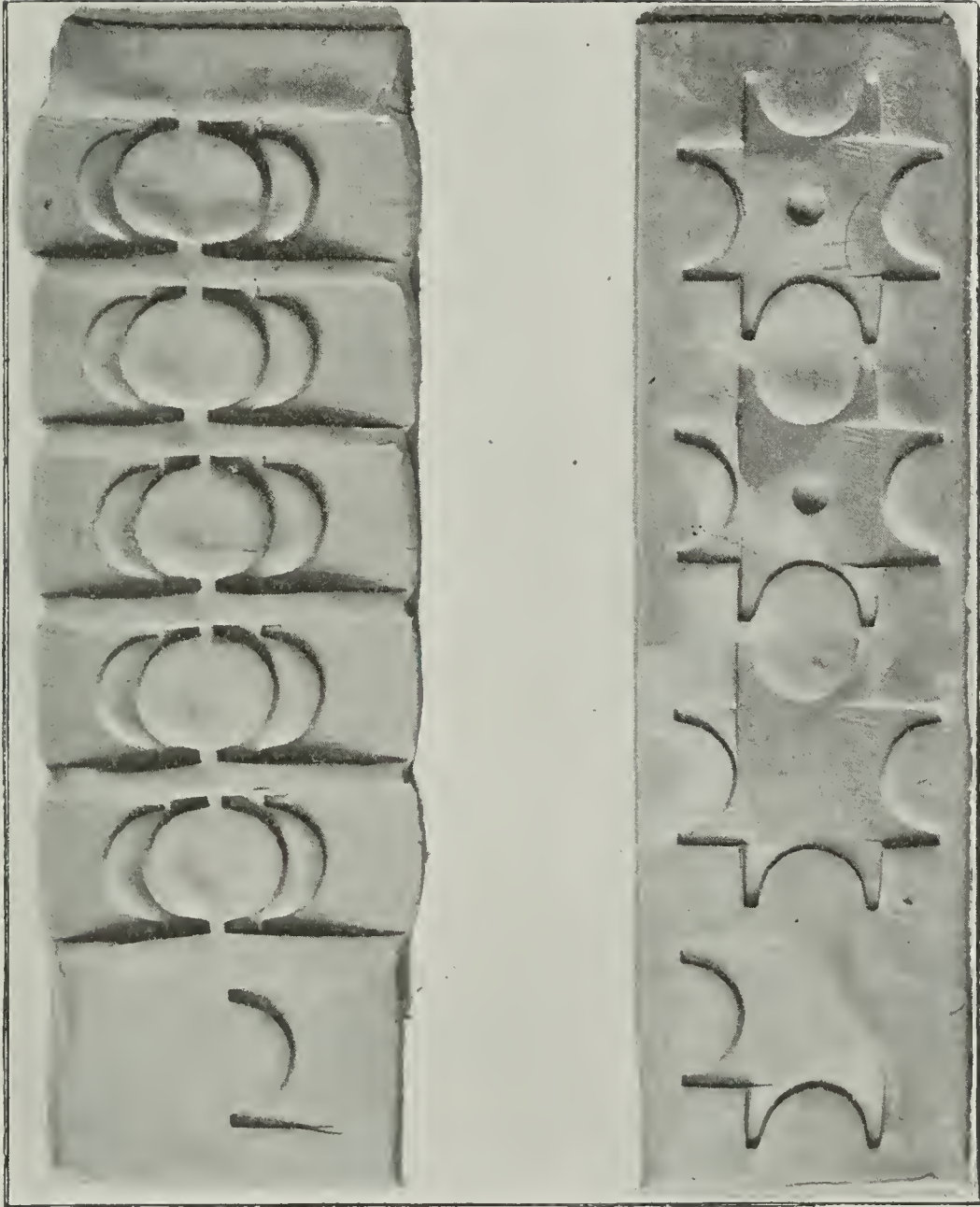


(Harbutt's "Plastic Method.")

Plate 19.



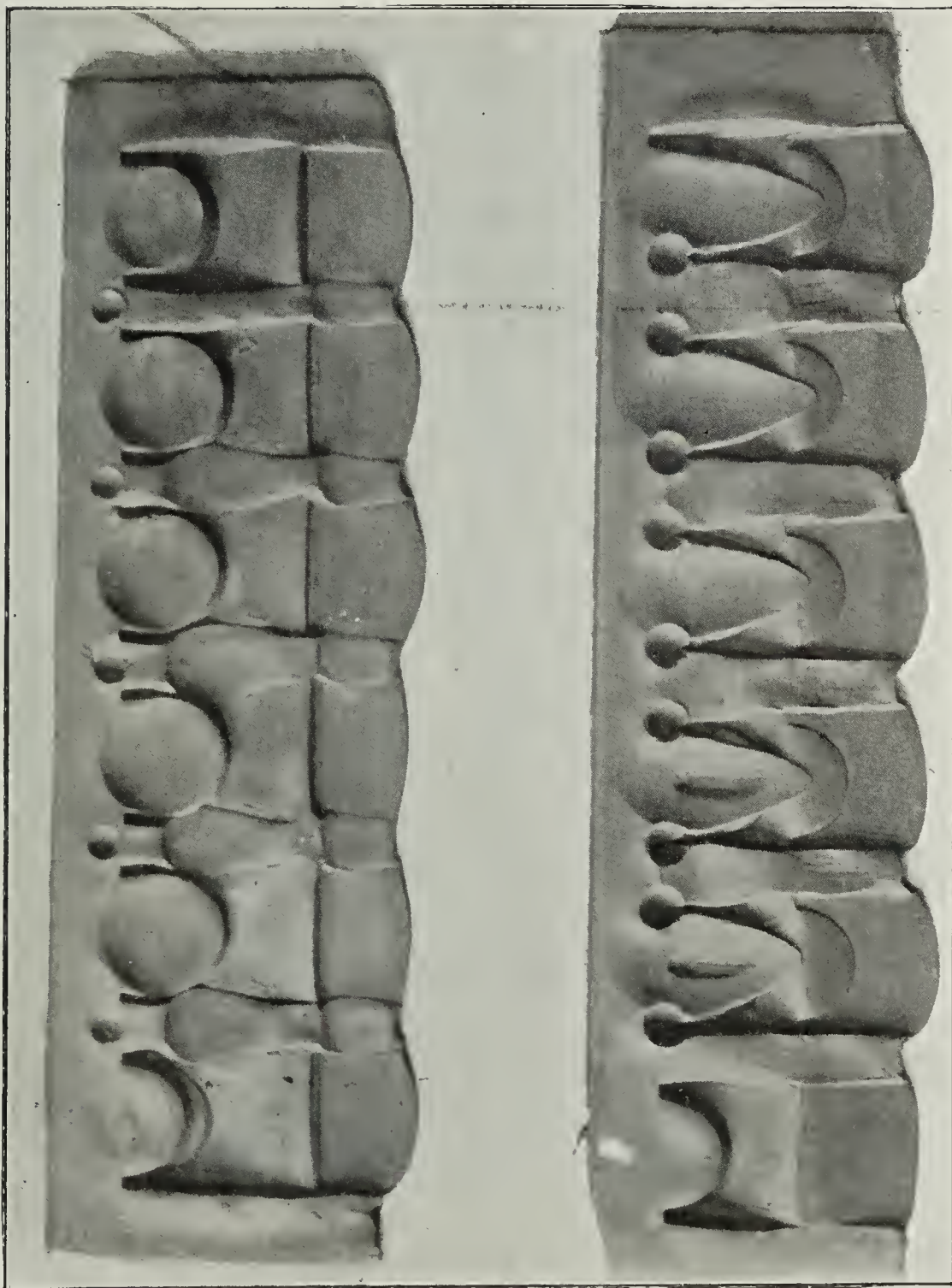




*Plates 20 and 21.*

*(Harbutt's "Plastic Method.")*





*Habbutt's "Plastic Method."*

*Plates 22 and 23.*





Plate 24.

[ (Harbutt's "Plastic Method.") ]









(Harbutt's "Plastic Method.")

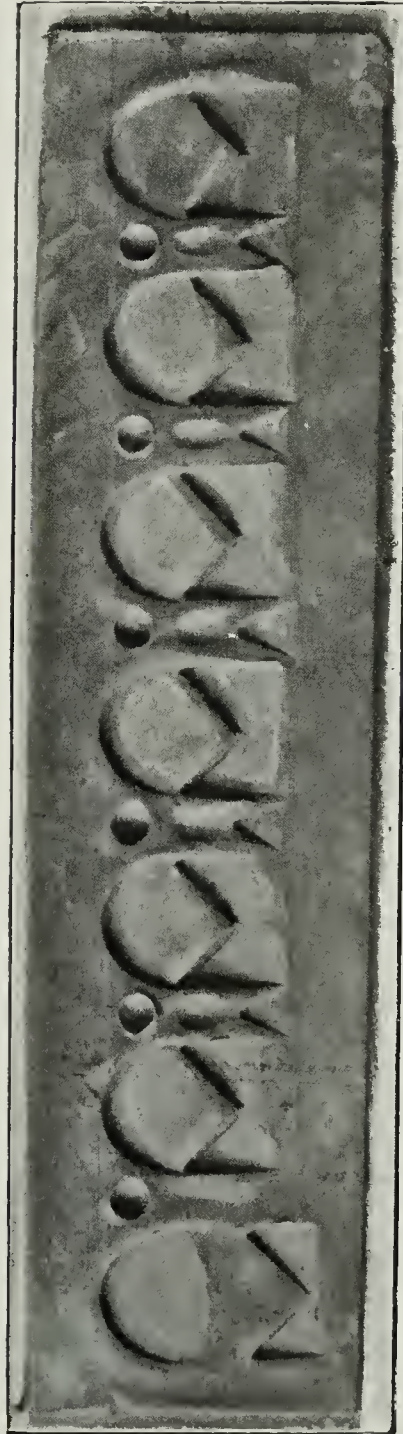




*Plate 26*

*(Harbutt's "Plastic Method.")*





(Harbutt's "Plastic Method.")







(Harbutt's "Plastic Method.")

Plates 28 and 29.



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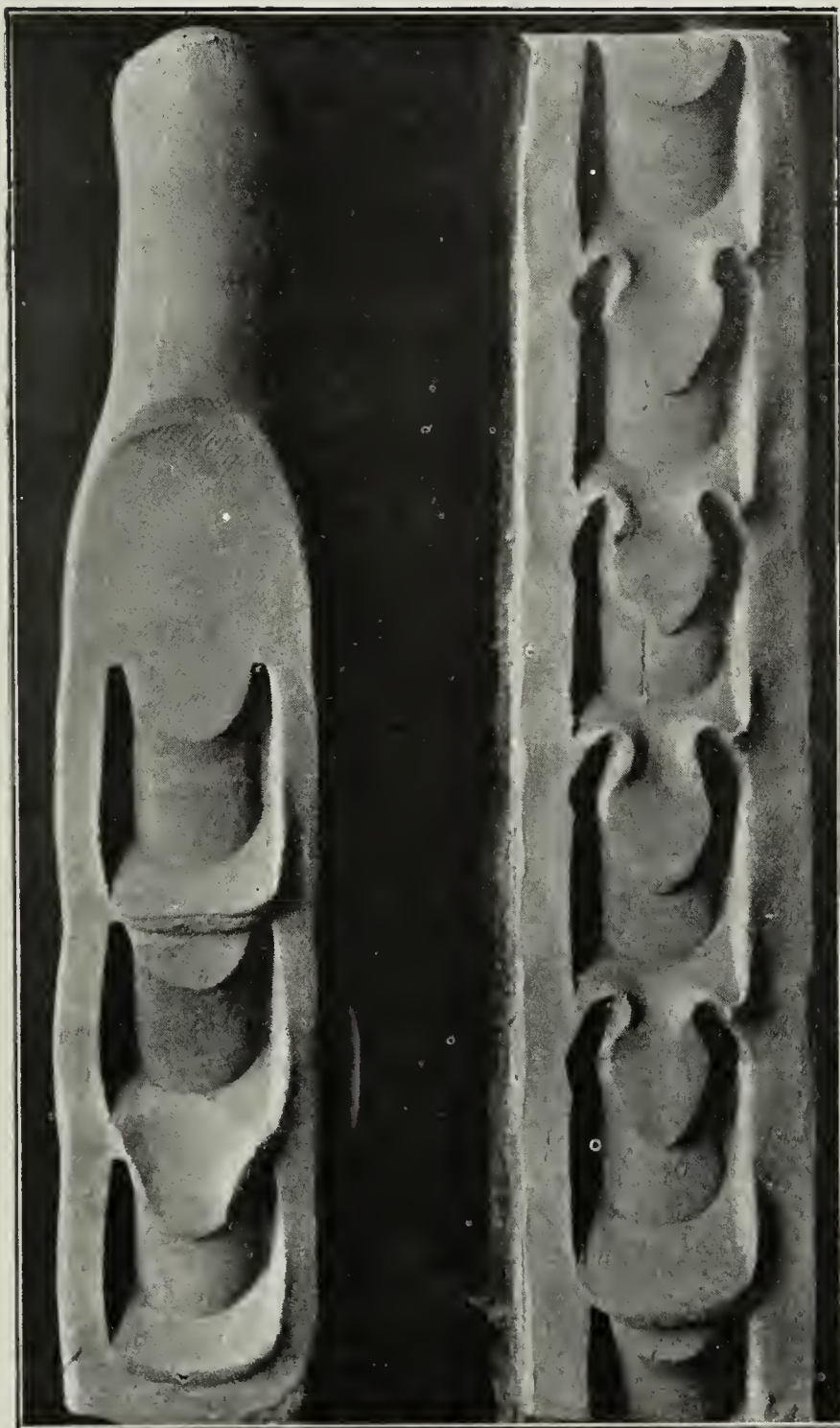
Nos. 30 and 31. The application of No. 2 tool to a vertical treatment, with the addition of a touch of the flexible tool No. 5.

No. 32 is formed by the same tool, No. 2, with a touch added of No. 4.

No. 33 a and b are produced by the ends of tools No. 2 and No. 1 respectively, the pressure by the finger being the same in each, and yielding almost identical results.

Series, alternation, repetition, contrast, opposition, etc., and other elementary principles of ornament, are illustrated by these shaped tools in a practical and interesting manner, and such instruction forms a good groundwork for original design. The ease, neatness, and accuracy with which the work is done, captivates the pupil from the first, and affords that necessary amount of encouragement, pleasure, and satisfaction at the right period of his efforts, when the imagination is so much in advance of the performance, that he is always eager for fresh developments; for in the Plastic Method originality of arrangement is always possible, while the power of execution is insensibly acquired, and a higher standard of technique arrived at.



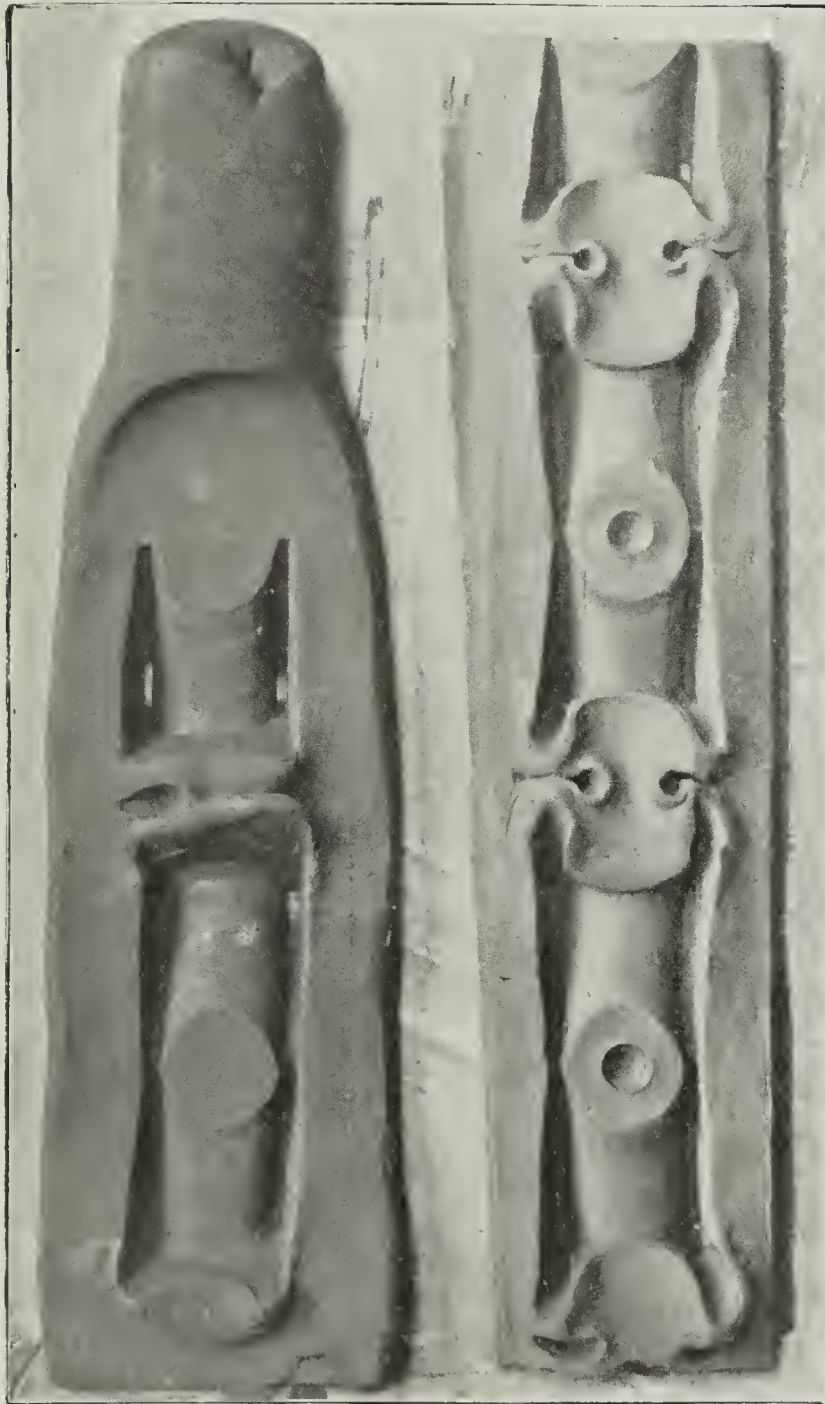


(Harbutt's "Plastic Method.")

Plate 30.



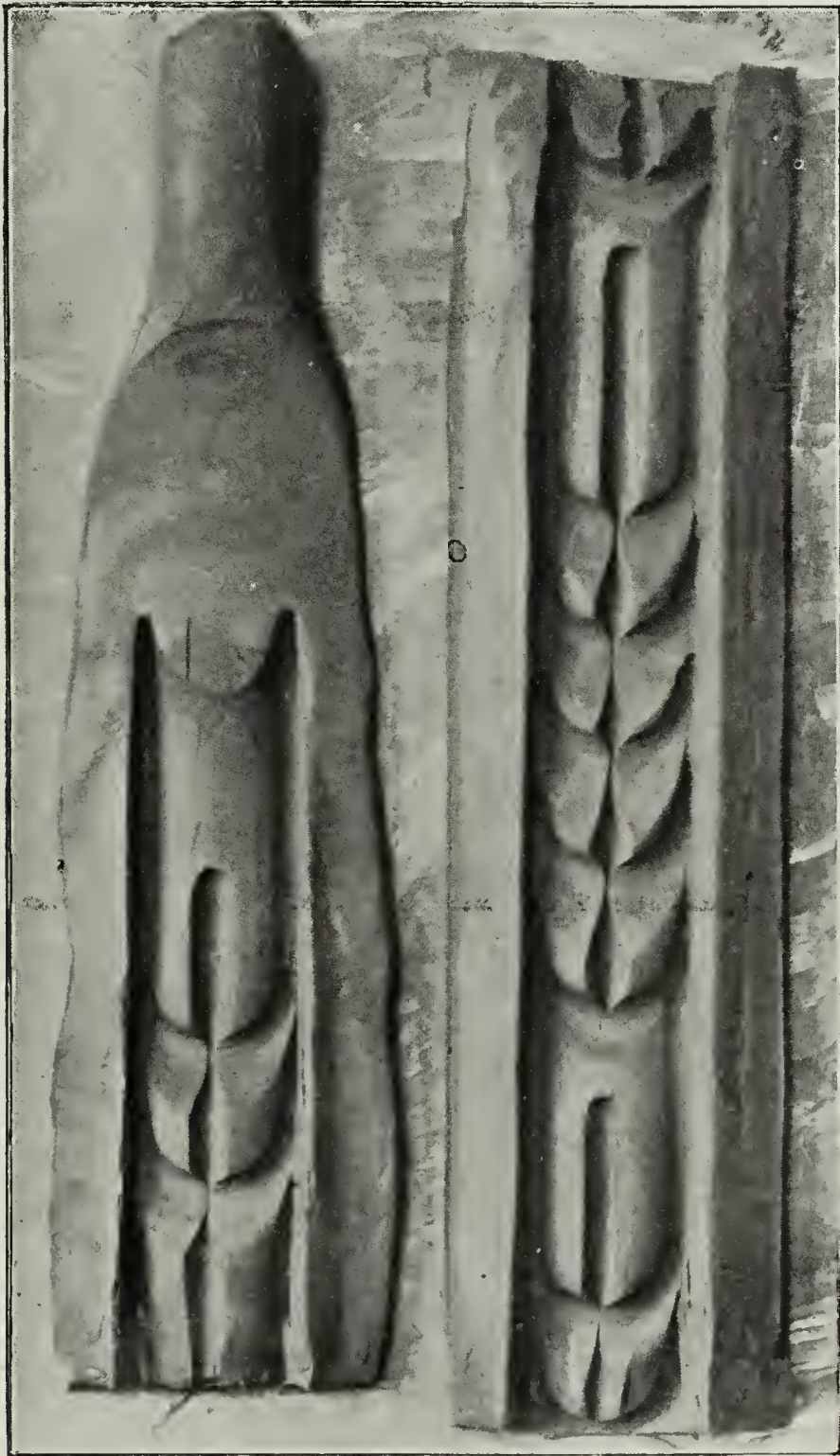




(Harbutt's "Plastic Method.")

Plate 31.

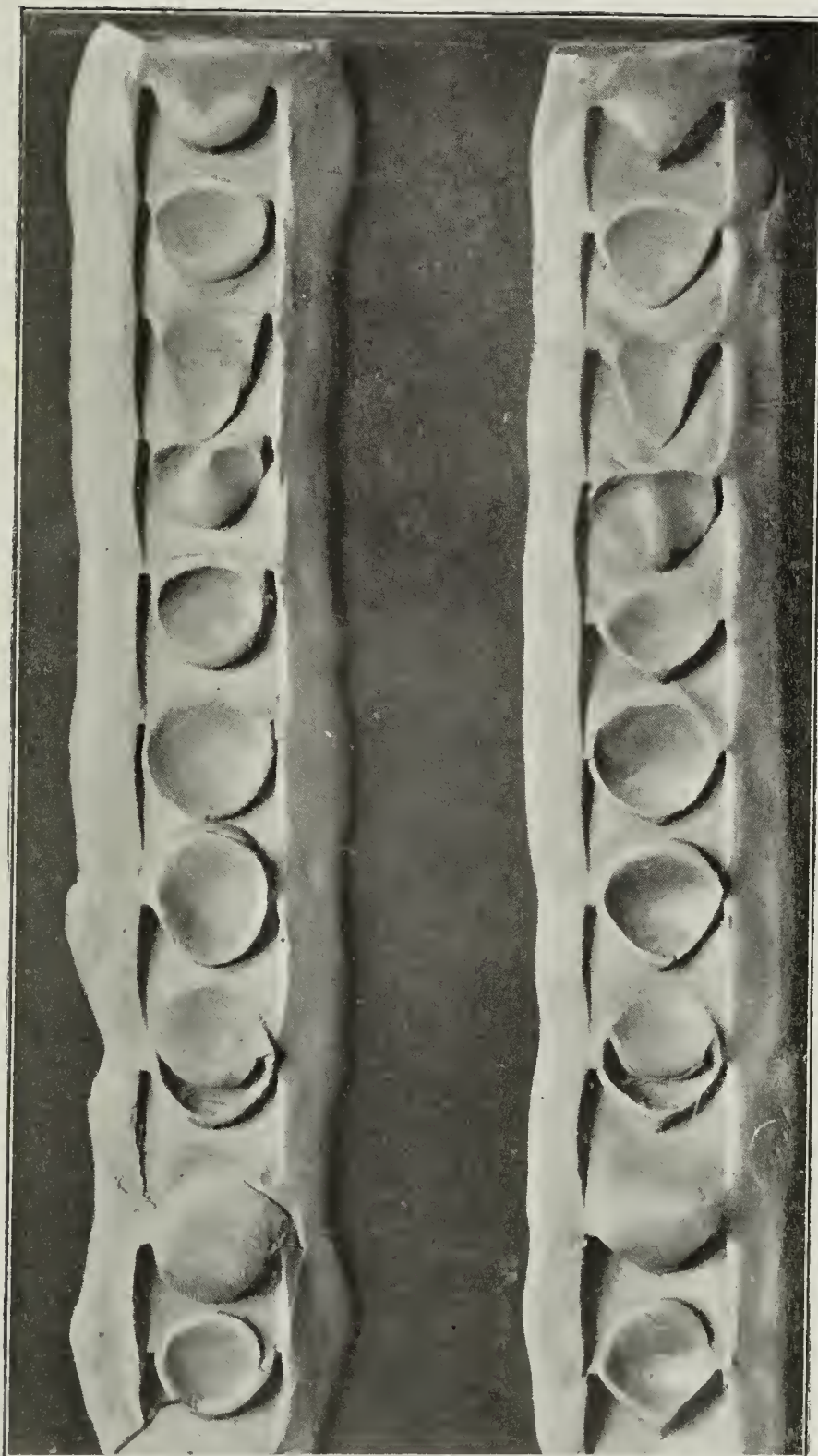




(Harbutt's "Plastic Method.")







(Harbutt's "Plastic Method.")





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The next step carries the pupil still farther, and enlarges his ideas in touching and varying the pressure of his fingers upon the material so as to modify or alter the geometrical shape, or to make quite a new one out of it. The advance is natural and certain to follow. Number 33, for instance, shows some of the variations which the hollow angle and curve shape take when pressed in a variety of ways by the tip of the finger. Number 45 also shows developments upon a simple square, and No. 46 upon a spherical shape fingered to assume different patterns, and upon which no tool of any description has been used.

When a child comes to model, in a true sense of the term, by the application and building up of material, the value of this preliminary training of eye, hand, and mind, will at once be apparent.

Care must be taken not to allow the broad, simple forms so produced to be destroyed by over-elaboration of surface and detail. Cultivate a decisive, firm, and definite use of the tool, always observing, however, due caution and restraint.

The drawing and writing is done with the registered flexible stylus, and pressure may be varied to any extent, even to exposing the cardboard, although

greater command and delicacy of hand is shown by lighter treatment. See Nos, 9, 11, 15, 17 and 18.

Drawing with an etching or fine knitting needle is shown in Nos. 8—12. The edge and flat side of the wire tool numbered 3 also gives great variety of treatment. (Nos. 6, 7, 10, 12.)

Such exercises should be regarded as preliminary or introductory to drawing with pencil and paper. The advantages of this system lie in the extreme ease and facility with which the point travels over the surface, the rapidity and thoroughness with which corrections can be made, and the inexpensiveness of the process. It effects a saving in time, energy, and means, which becomes very appreciable when dealing with large classes.

The tools may be cleansed from any fragment of adhering Plasticine by simply pressing them on the small supply of material kept on the corner of the hand-desk.

When more than usually creditable work is done, the tablet can be readily unlaced from the board and transferred to the exhibition case, where it may be shown for a week or two as a stimulus to the rest of the school. The Plasticine can then be taken off and used again. If it is desired to keep the work in a more permanent

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form, it may easily be cast in plaster by means of the casting frame by following the instructions on pages 14—19; it would however be only in the more advanced and later stages, where design and modelling from nature are the principal features, that the work would be thought worthy of such preservation. Under ordinary care, and even unenclosed, the work can be kept uninjured for years without the necessity of casting at all.

No. 16 shows a class of design begun by the free use of the circular-shaped tool, and finished by the finger or flexible stylus. Exercises of this character have a direct bearing upon the art of wood-carving, and they can be multiplied to any extent, there being unlimited scope for originality of treatment and design.

Particular attention should be paid to the character of work shown in No. 3. It occupies a middle place between drawing and modelling, with an element of carving thrown in, and induces great freedom of action. An inexhaustible field for *practical* work of a most useful and valuable kind is here presented, with the additional advantage that the result offers no difficulty to expeditious casting, there being no undercutting to take into account. The shapes are

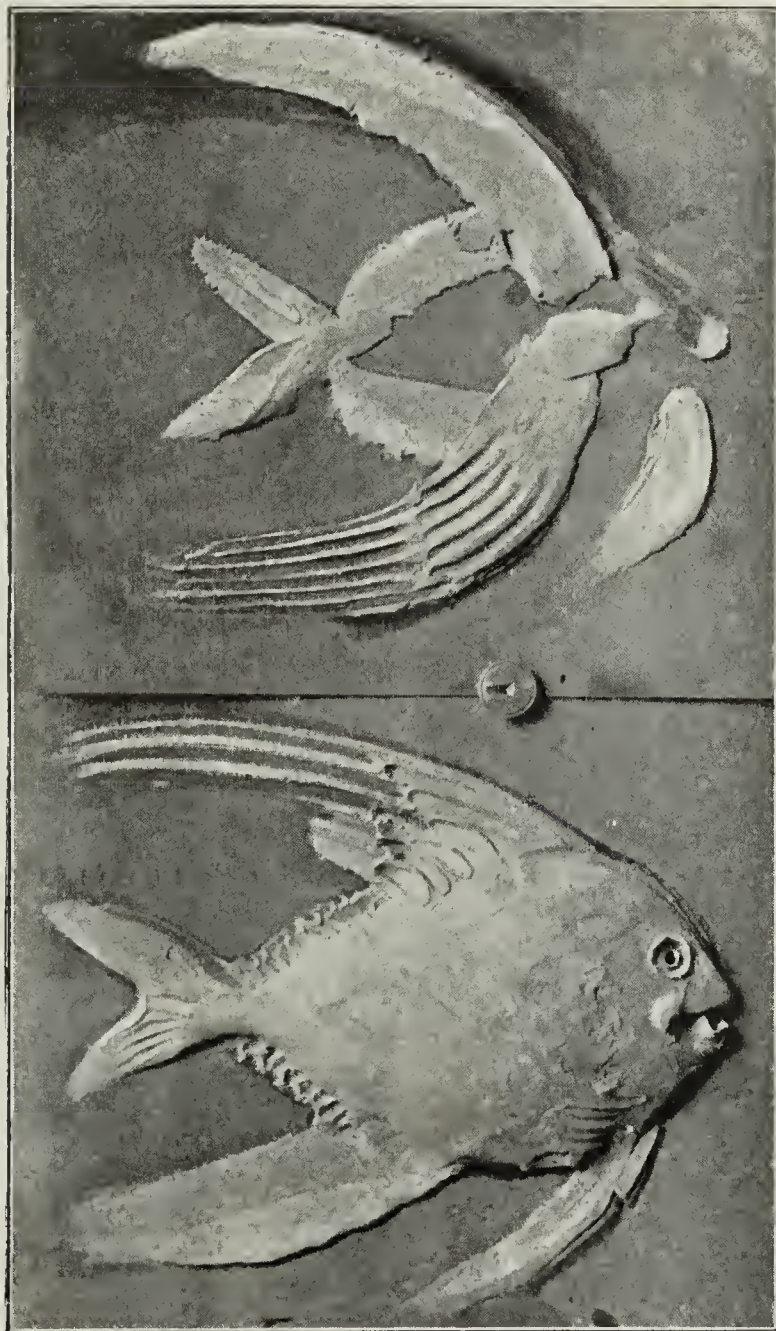
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first boldly swept on by the finger with the free motion of the elbow and shoulder—this forms the beginning of such objects also as Nos. 3, 15, 34 *a b c*, and 44. The flexible stylus should then be employed to clear and refine the form; surface treatment and modelling follow subsequently. No ground is here necessary, so that the pupil can quickly get to work, and cannot fail to become interested in it.

No. 10 is a class of work the reverse of the foregoing. A ground is laid on, and the forms are broadly scooped out with tool No. 3, the design appearing in intaglio instead of relief. These also can be easily cast; No. 55 being produced by the same method and a cast made.

Variety may be obtained by modelling many of the lessons, dispensing with the ground altogether.





(Harbutt's "Plastic Method.") Pages 110 and 145. Plate 34 a and b.







(Harbutt's "Plastic Method.")

Pages 110 and 145

Plate 34c.



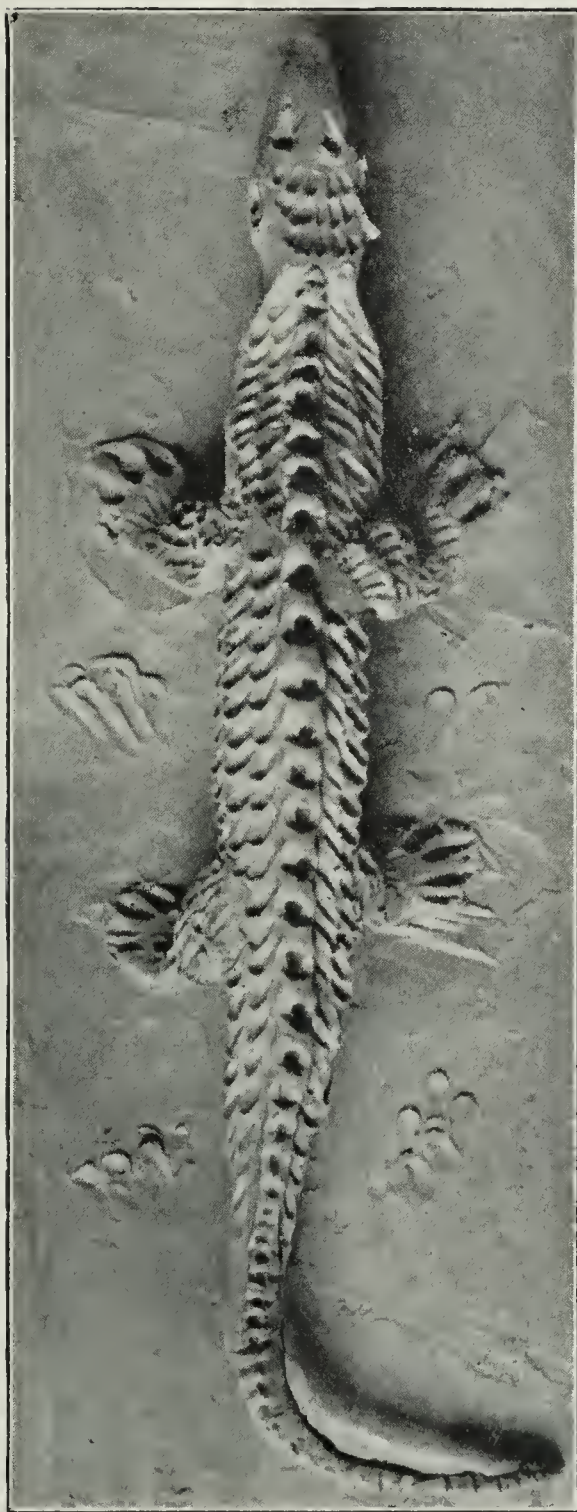
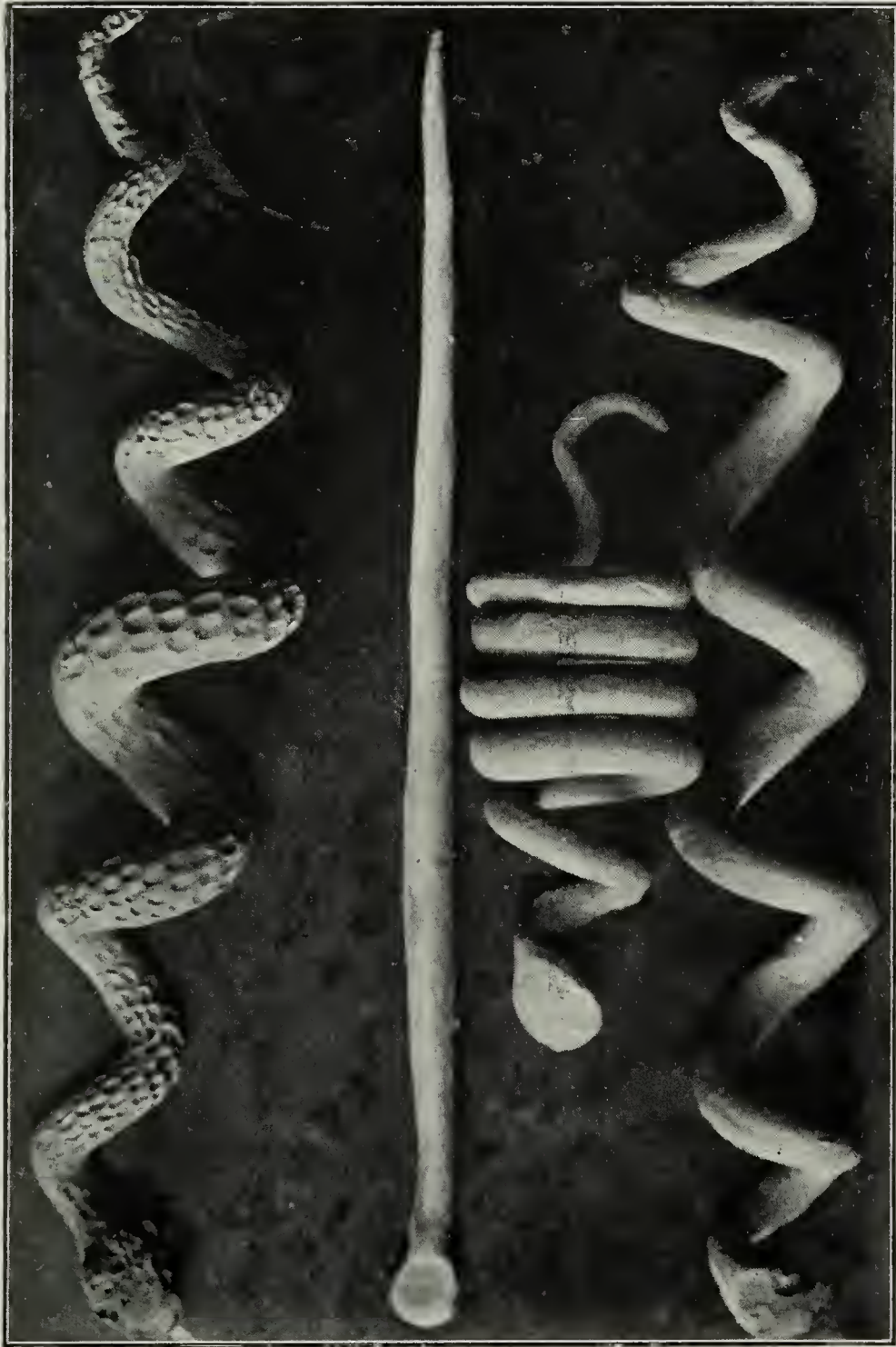


Plate 35.

(Harbuti's "Plastic Method.")







*Harbutt's "Plastic Method."* - Page 161.

*Plat: 36.*



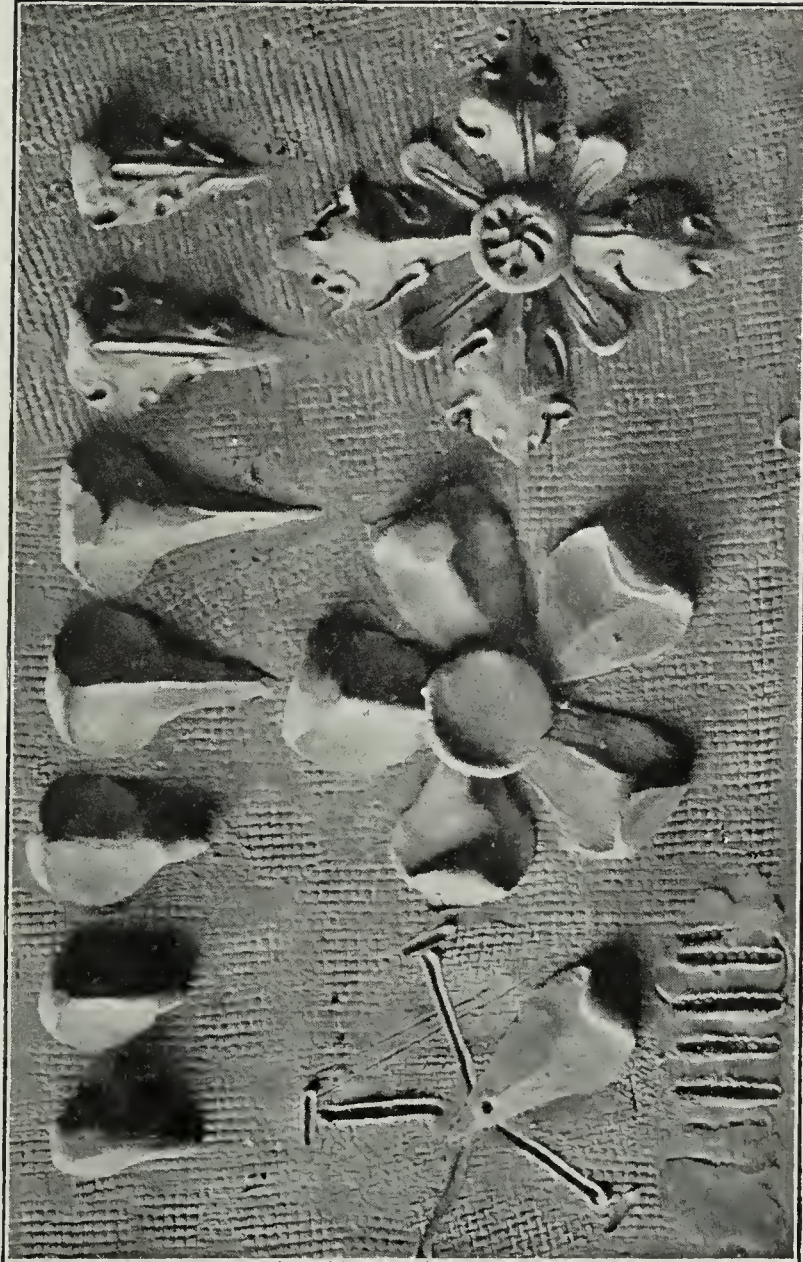


A useful exercise consists in the teacher showing to the class for a few minutes or handing round such objects as a pear, tomato, a leaf, or even insects and other small creatures, such as frogs, snakes, birds, fish, etc., asking the class to model from memory. Nothing tends more to develop the artistic faculties, strengthen the powers of observation and reflection, and at the same time stimulate the imagination.

For those who, in the graphic arts, have never tried this recourse to *memory*, the difficulty may appear great and the license too wide, but after all the difficulties are largely imaginary. There is such a thing as "a graphic memory," the result of visualization based upon scientific lines, which can easily be cultivated, and prove of immense value in the pursuit of other studies and the affairs of after life.

The same procedure may be adopted by means of any good drawing of objects of natural history (Nos. 34, 35, 36, 48, 49 and 50).

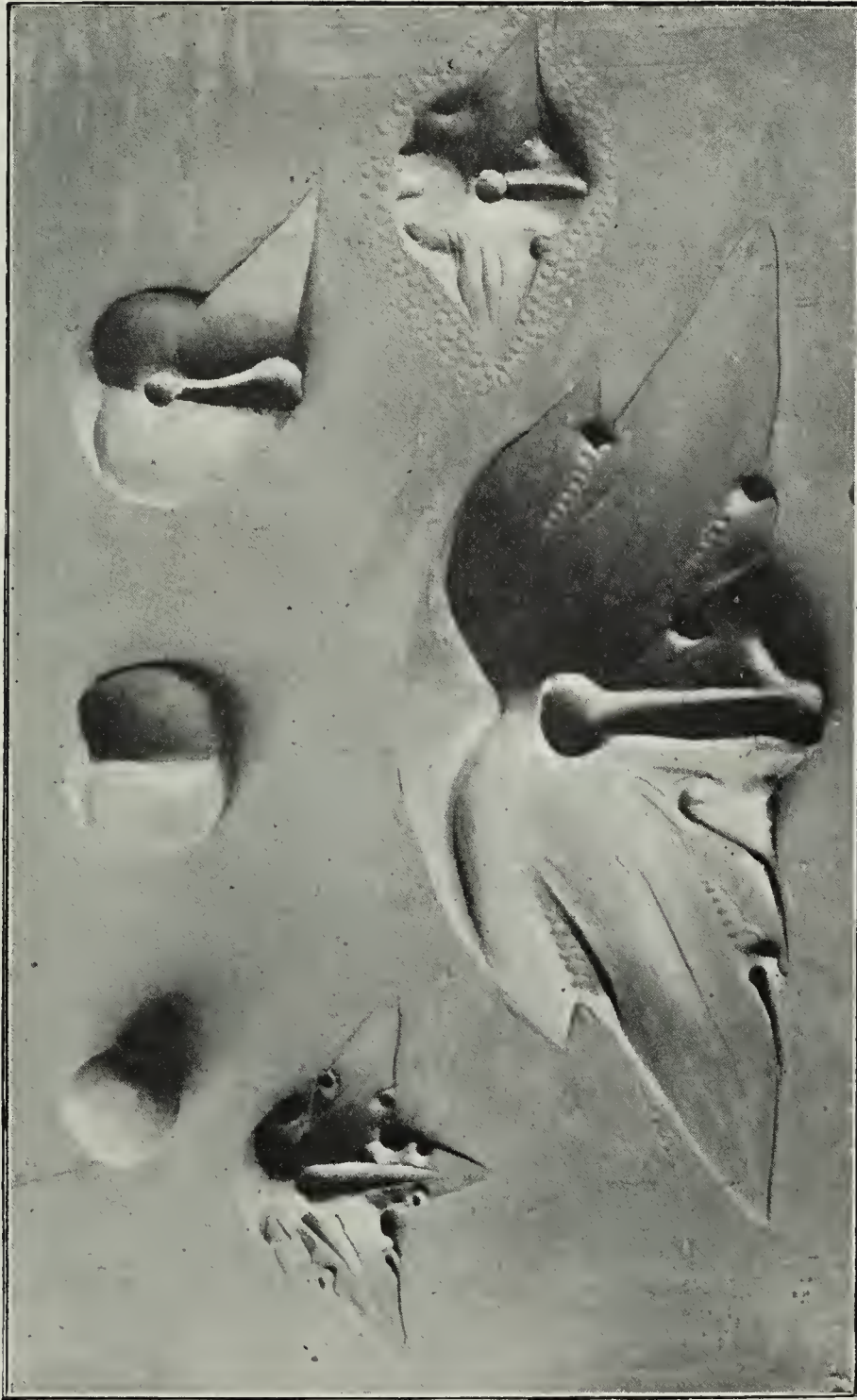
When the actual modelling in high relief is begun, there will not be much difficulty in following such progressive lessons as Nos. 37, 38, 39, 40, 41 and 42. No. 43 is more complex and not so elementary, but the introduction and use of the section would be soon understood by ordinary students, and open out work in advanced stages.



(Harbutt's "Plastic Method.")



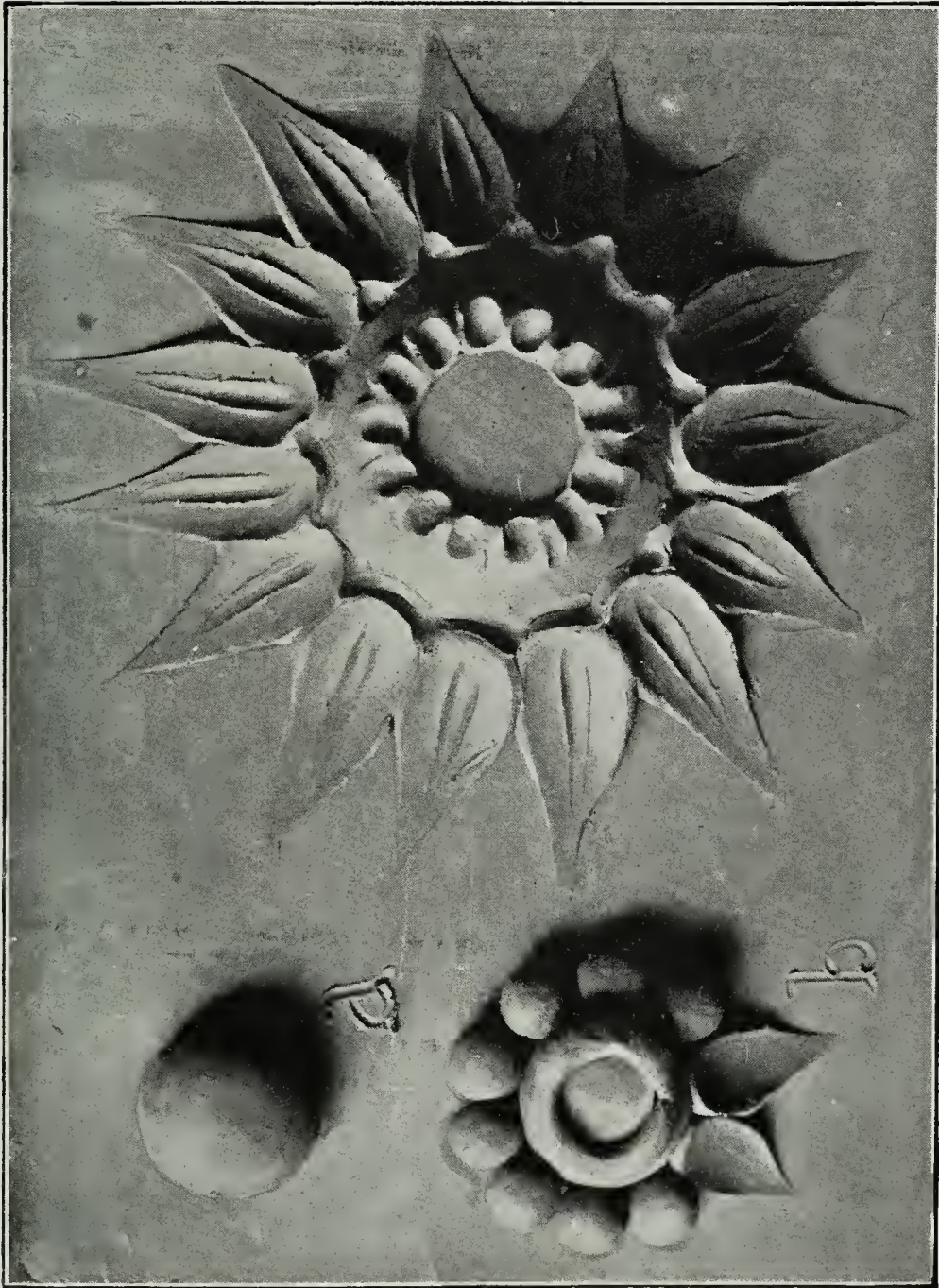




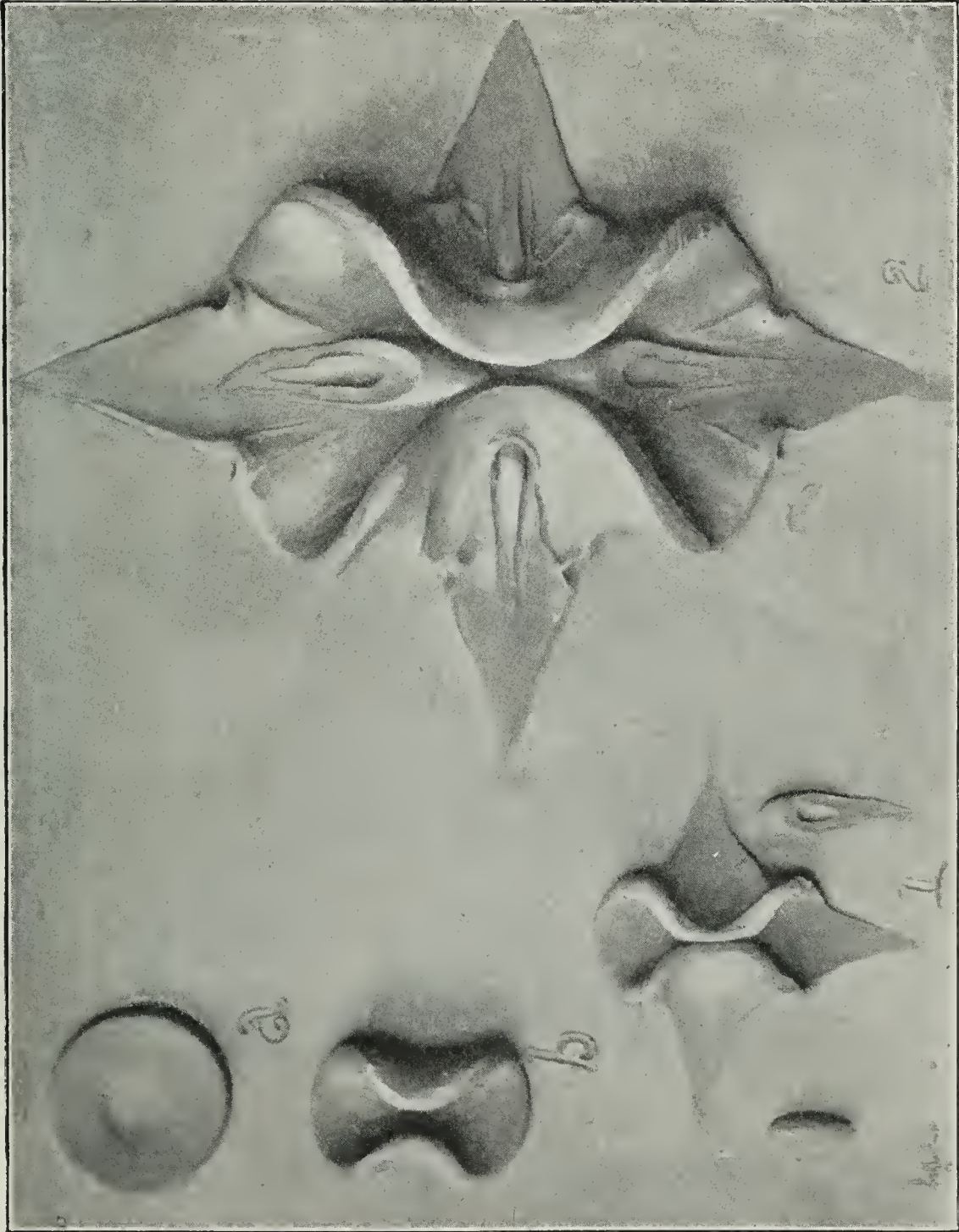
(Harbuit's "Plastic Method.")





*Plate 39.**(Harbutt's "Plastic Method.")*





(Harbutt's "Plastic Method.")





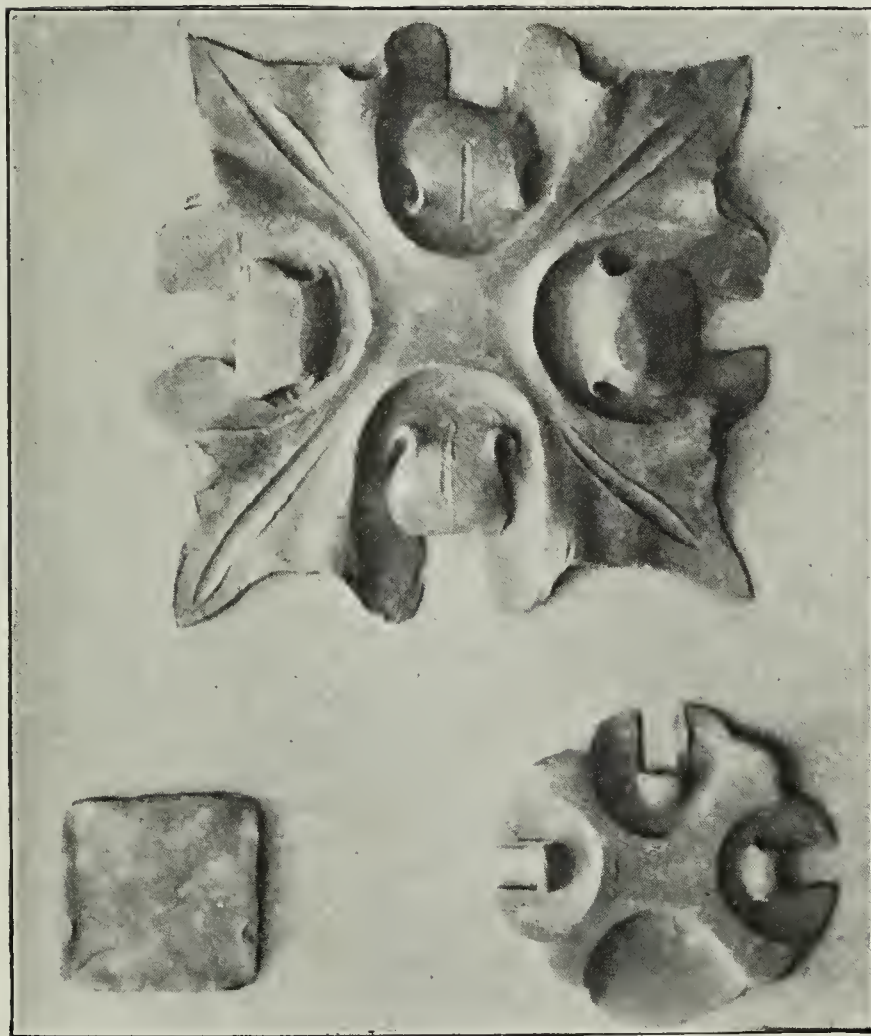
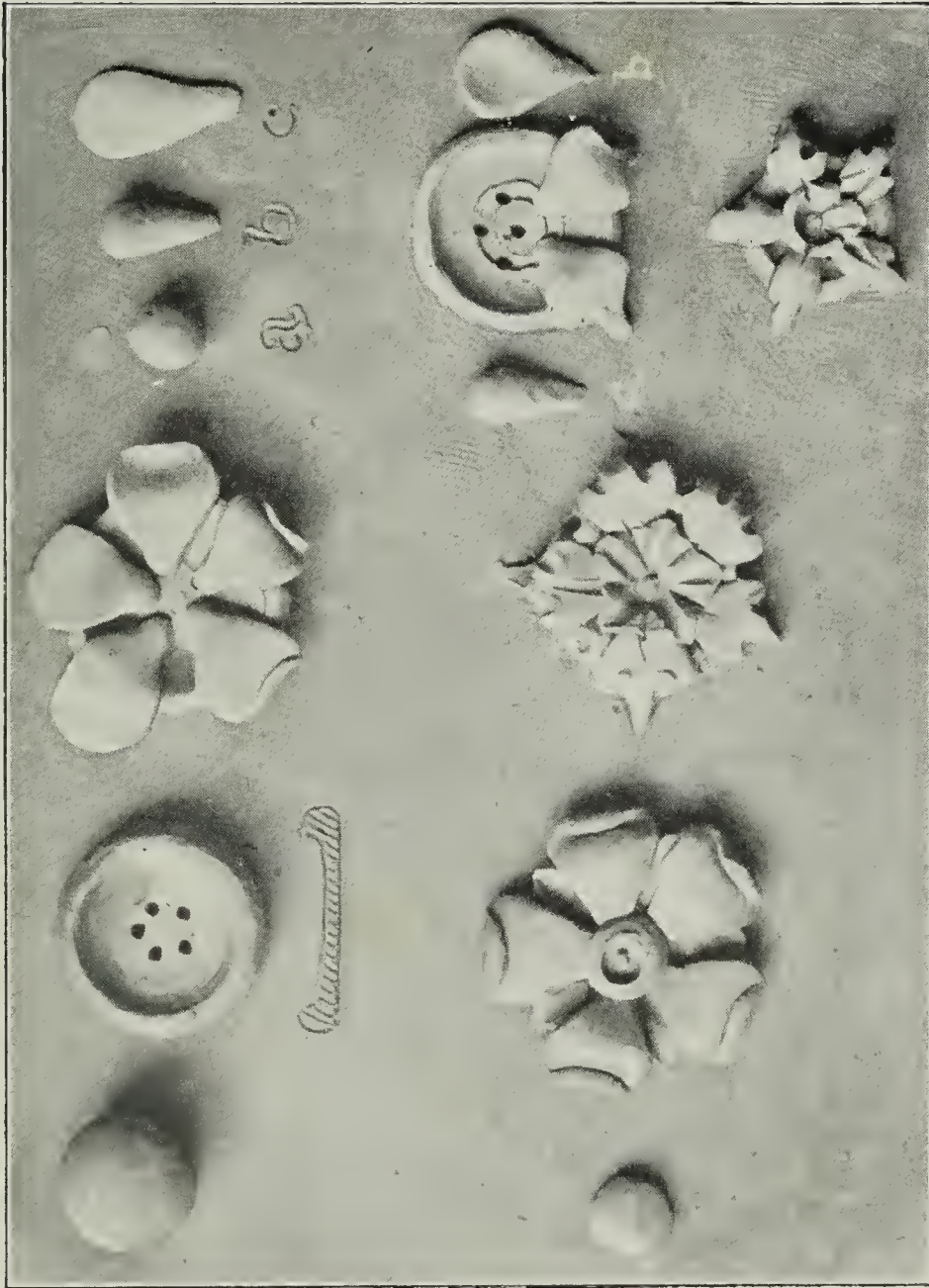


Plate 41.

(Harbutt's "Plastic Method.")







(Harbutt's "Plastic Method.")

Plate 42.





(Harbutt's "Plastic Method.")

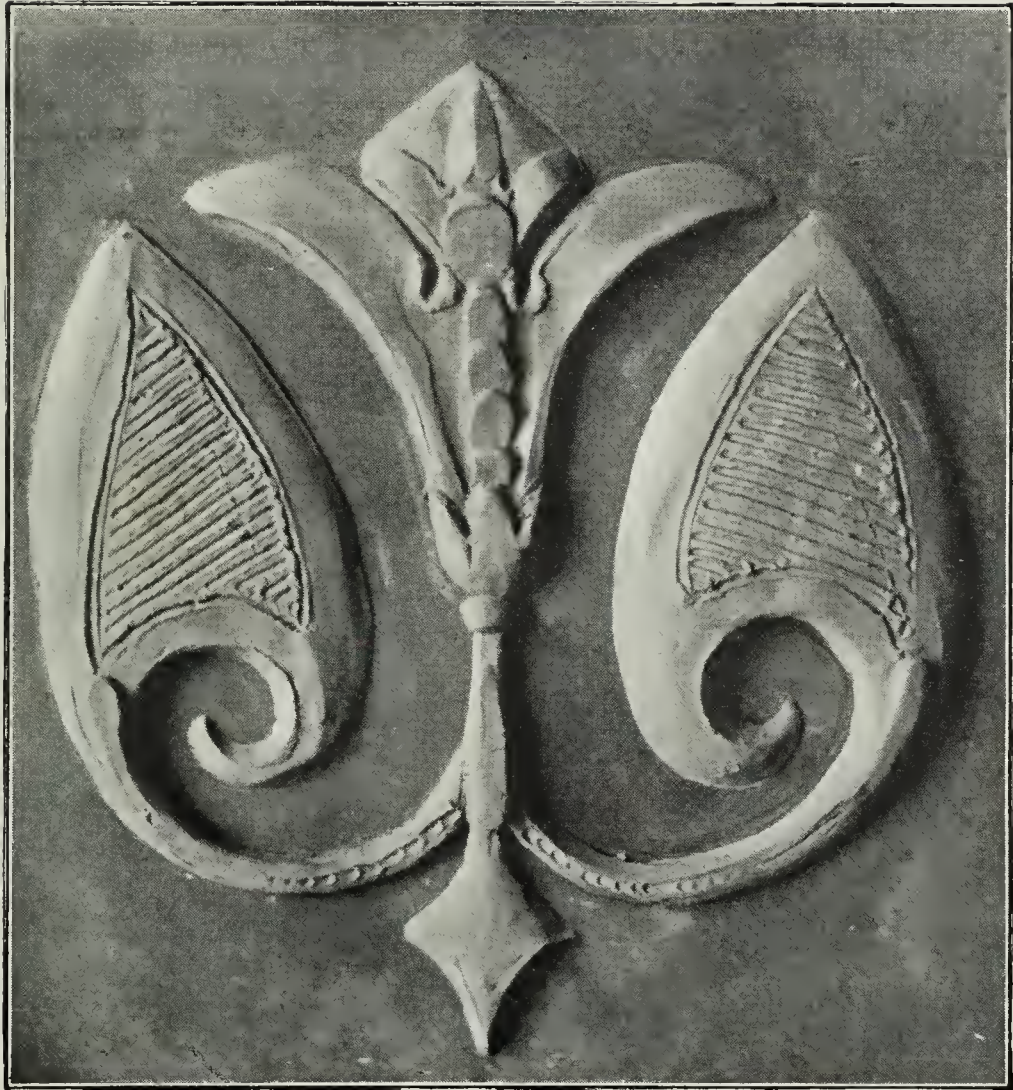


No. 45 gives six designs based upon the elementary form of No. 41—the square, produced entirely by the finger without aid from any of the tools.

No. 46 is also finger work exercised upon a spherical piece of Plasticine. No. 47 are the same shapes produced by the exclusive use of the square-end of tool No. 2.





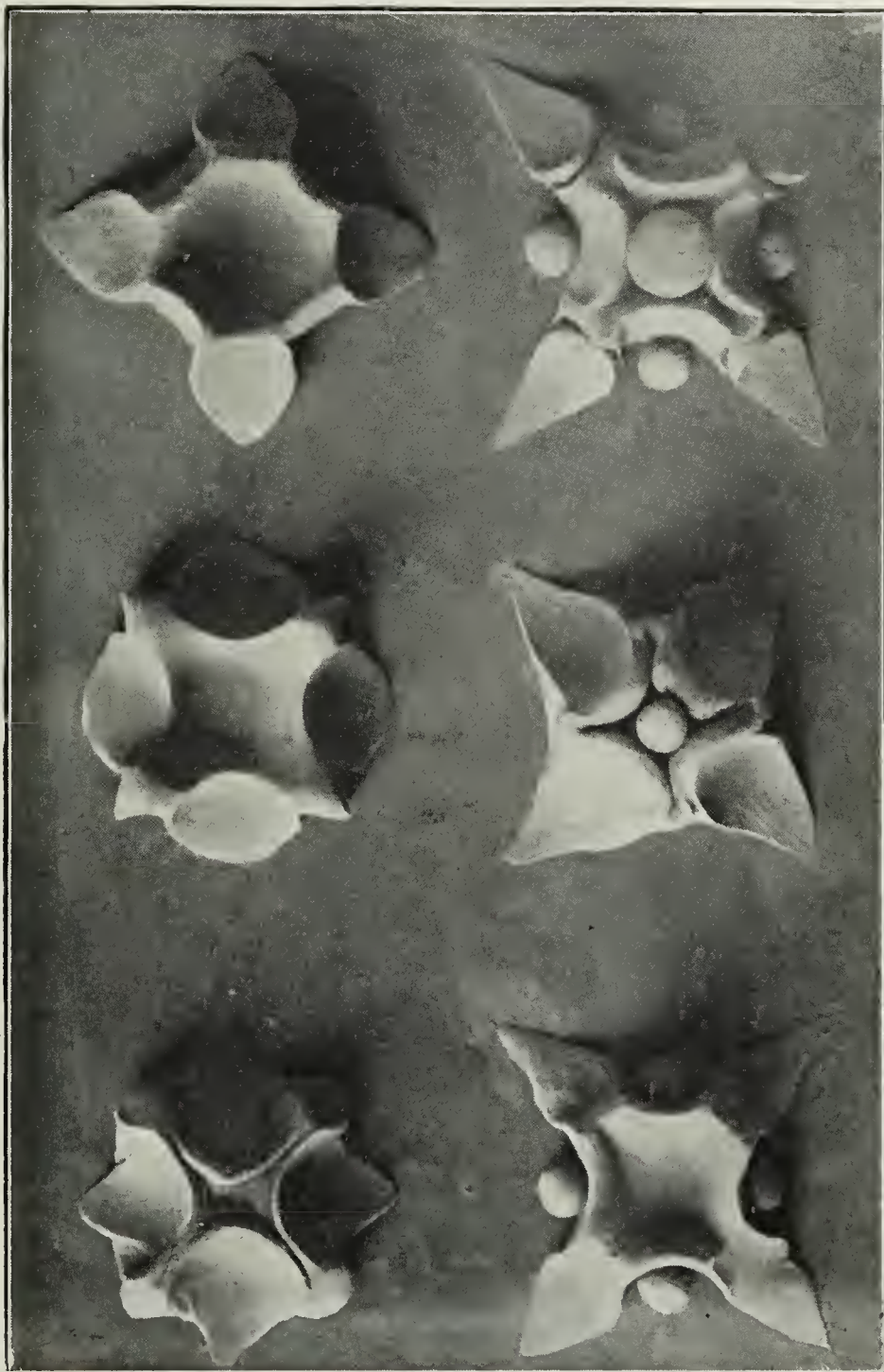


(Harbutt's "Plastic Method.")

Pages 110 and 145.

Plate 44.





*Plate 45.*

*Pages 107 and 135.*

*(Harbutt's "Plastic Method.")*







(Harbutt's "Plastic Method.") Pages 107 and 135.

Plate 46.



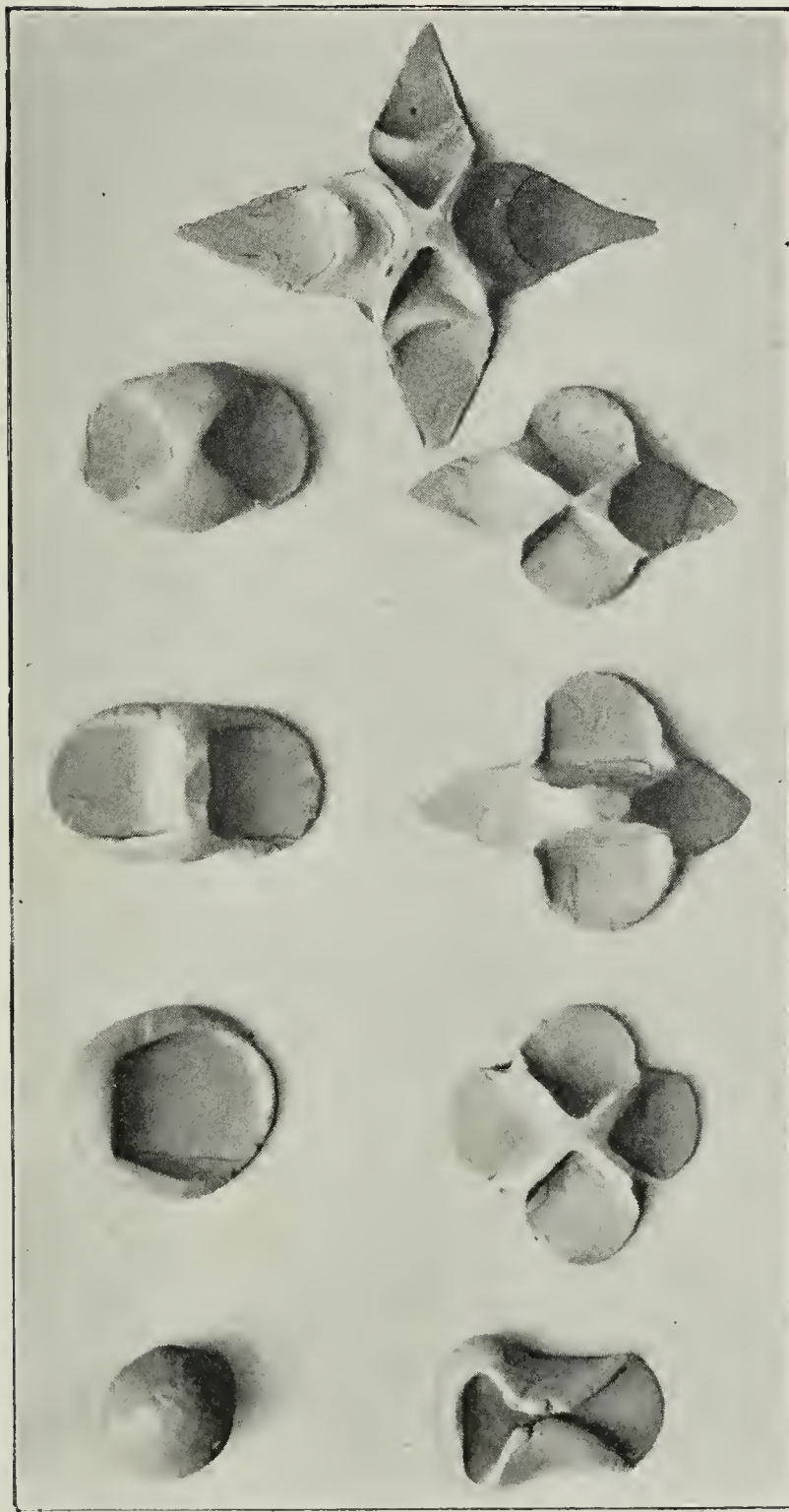


Plate 47.

Page 135.

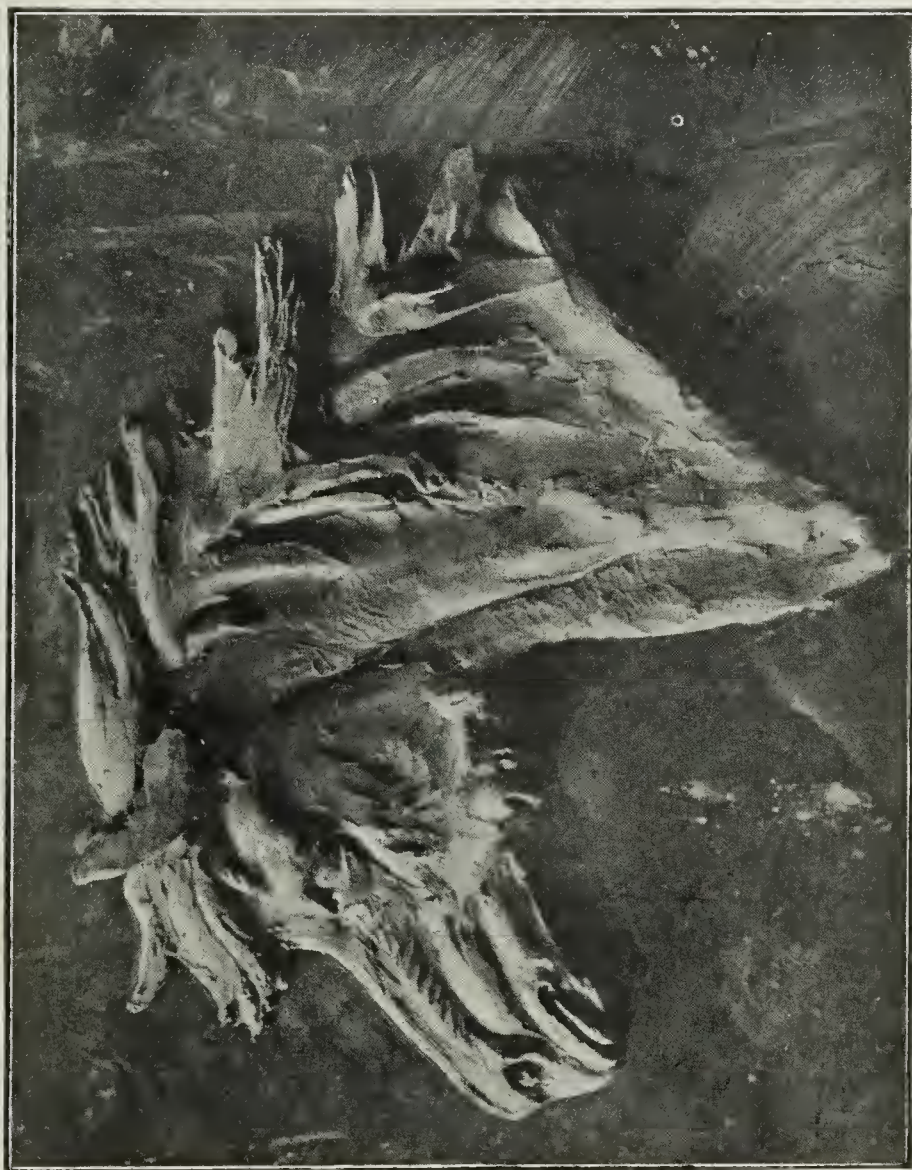
(Harbutt's "Plastic Method.")



Reference has already been made to modelling from outline or shaded drawings of objects of natural history. No. 34 (*a, b, c*) shows the general mode of procedure. Thus it will be seen that *drawing* is the basis of the "Plastic Method" from the beginning: (*a*) the portions in lower relief are first freely laid on with a sweeping motion from the shoulder; (*b*) the higher relief and corrected proportions; (*c*) the surface detail and finish. In Nos. 44, 48, 49 and 50 a bolder treatment on the same lines is shown.





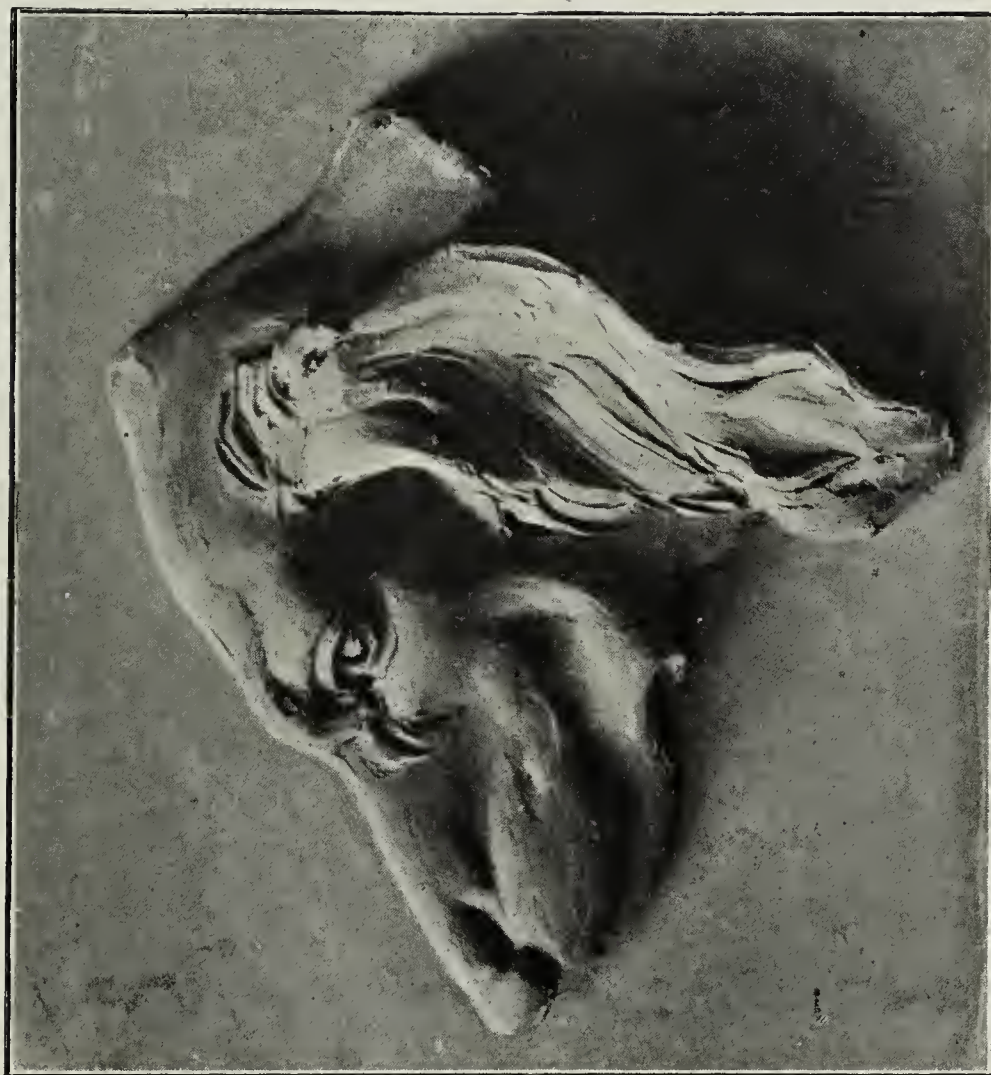


(Harbutt's "Plastic Method.")

Page 145.

Plate 48.





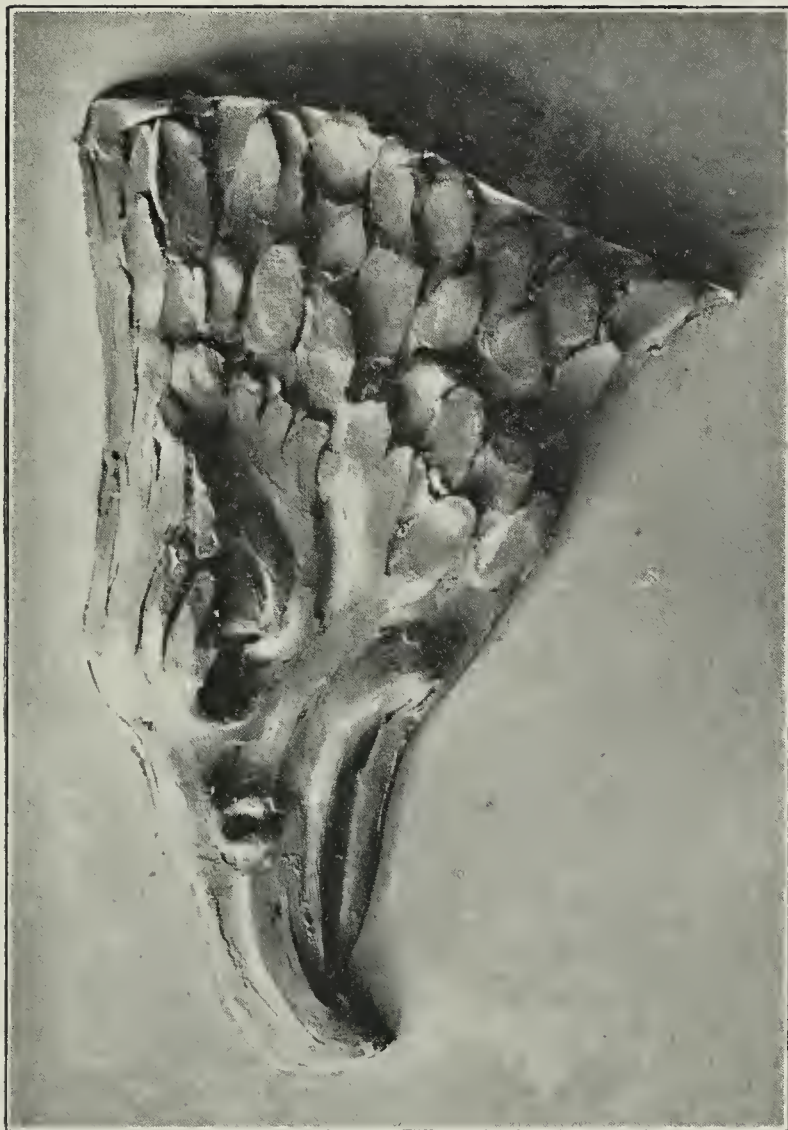
(Harbutt's, "Plastic Method.")

Page 145.

Plate 49.







(Harbutt's "Plastic Method.")

Page 145.

Plate 50.





The same general treatment can be applied to outlines and photographs of ornament, the pupil having reference only to a good cast to determine his scale of relief.

In modelling plant form the greatest care is required to produce as close an imitation of the actual object as the material will allow (No. 51). But when the same forms are used as the elements of a design, *imitation* gives place to *interpretation* of nature, and a greater latitude of treatment is allowable. The principle underlying the growth of nature must be observed, the character, structure, and individuality of the plant expressed, and no truth violated (Nos. 52 and 53).





(Barbutt's "Plastic Method.")







(Harbutt's "Plastic Method.")

Plate 52.





(Harbutt's "Plastic Method.")



No. 54 shows a class of twisting, plaiting and weaving—a pattern easily followed. It demonstrates the extreme plasticity and tenacity of the material, the ease with which it may be rolled out and manipulated, and its general suitability for school work. Letters, figures, and elementary forms can be carried out in this way—by cutting the Plasticine into slips, or by rolling into thin ropes as in No. 36.

No. 56 (page 1) carries this idea still further by erecting letters and simple forms in a *vertical* manner. For this purpose the Plasticine requires to be harder than usual.

NOTE TO p. 4.—If it is desired to HARDEN the Plasticine for any special purpose—as in modelling very small subjects, and bas-reliefs where great detail and finish are required—it suffices to press a few pieces out flat, like cakes, and immerse in boiling water for a few minutes, and then knead well up in the hands and fingers.

TO SOFTEN, add a little vaseline, and work it well in the same way. These operations can be repeatedly performed without injury to the paste.







(Harbutt's "Plastic Method.")

Plate 54.





*Harbutt's "Plastic Method."*)

*Pages 12 and 110.*

*Plate 55.*



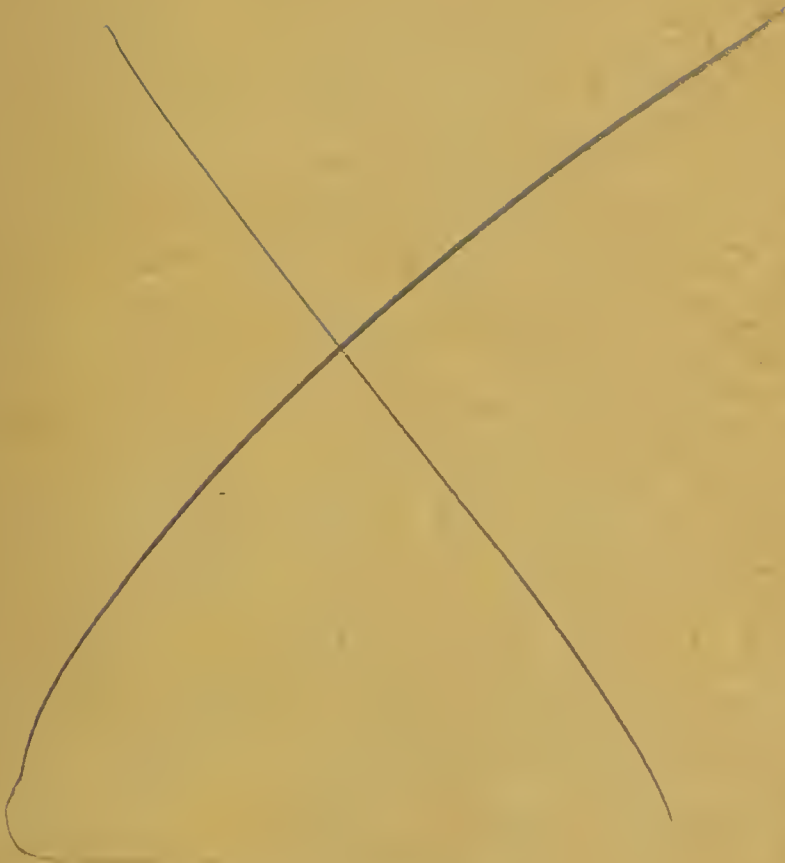


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